

MOTOR AGE

DEC 27 1946

DETROIT



DECEMBER 1946

A CHILTON PUBLICATION

Christmas

✓ R v. 66 Dec. 1946 - Nov. 1947



Soft pressure does it . .

- *Soft pressure controls oil, saves cylinder walls, insures long engine life.*

You get all this in every installation of a Hastings Steel-Vent "Motor Engineered" set.

Use Steel-Vents with confidence—in rebores, re-sleeves or badly tapered jobs.

SOFT PRESSURE DOES IT—IN REBORES, TOO. 2000 rebored cylinders in one year—and they all get Steel-Vents: "During 1943, we bored over 2000 cylinders and used Steel-Vent sets in all of them . . . Recently we examined cylinders which we rebored and installed Steel-Vents in several years ago. With 50,000 to 100,000 miles, the Steel-Vents had kept cylinder wear down to a bare minimum. Our customers average two re-ring jobs in bored cylinders where Steel-Vents were used in the new rebores."

HASTINGS MANUFACTURING COMPANY, HASTINGS, MICHIGAN • Hastings Limited, Toronto

TWO GREAT RADIO SHOWS

"I DEAL IN CRIME"
Saturday nights • ABC

"ADVENTURES OF MICHAEL SHAYNE"
Tuesday nights • MBS
(Wednesday nights on West Coast)

HASTINGS STEEL-VENT PISTON RINGS

U. S. PAT. 2,148,997



TOUGH ON OIL-PUMPING GENTLE ON CYLINDER WALLS



19 of the 20
makes of motor cars
embody essential parts
 made by
BORG-WARNER!

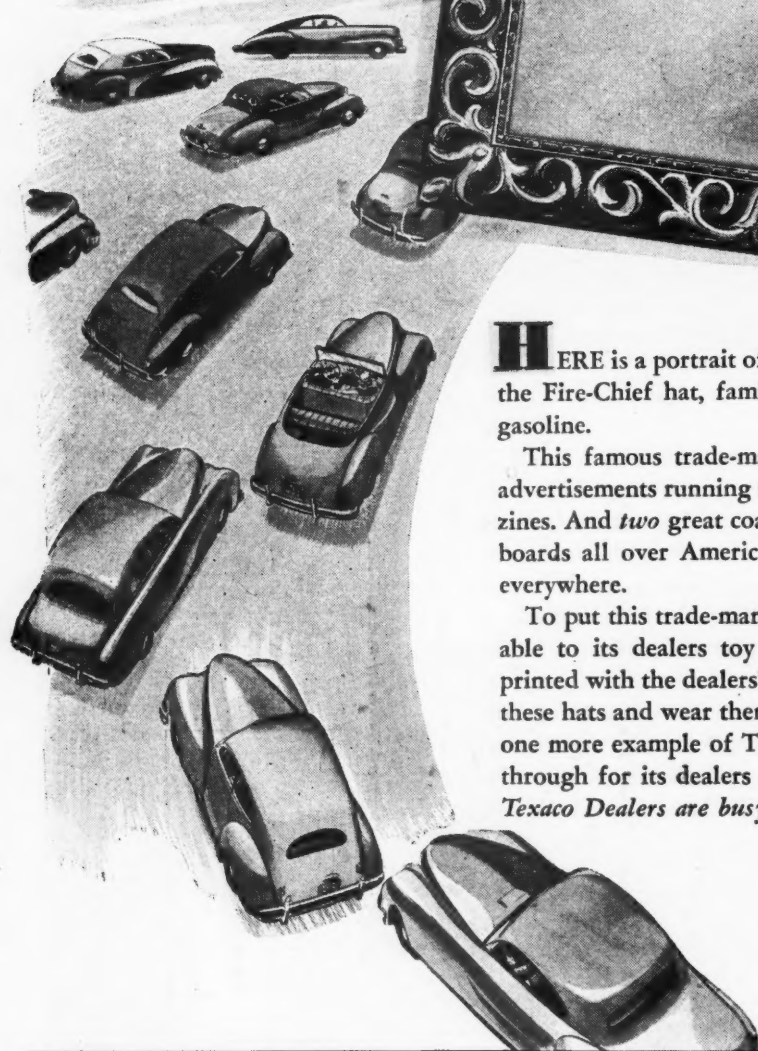
TRANSMISSIONS
 TIMING CHAINS
 OVERDRIVES
 SYNCHRONIZERS
 CLUTCHES

UNIVERSAL JOINTS
 DRIVE SHAFTS
 CARBURETORS
 RADIATORS
 TAPERED WHEEL DISCS



Executive Offices, Chicago. These units form Borg-Warner: BORG & BECK • BORG-WARNER INTERNATIONAL
 BORG WARNER SERVICE PARTS • B-W SUPERCHARGERS, INC. • CALUMET STEEL • DETROIT GEAR • DETROIT VAPOR
 STOVE • INGERSOLL STEEL • LONG MANUFACTURING • LONG MANUFACTURING CO., LTD. • MARBON • MARVEL-SCHIEBLER
 CARBURETER • MECHANICS UNIVERSAL JOINT • MORSE CHAIN • MORSE CHAIN CO., LTD. • NORGE • NORGE-HEAT
 NORGE MACHINE PRODUCTS • PESCO PRODUCTS • ROCKFORD CLUTCH • SPRING DIVISION • WARNER AUTOMOTIVE PARTS
 WARNER GEAR • WARNER GEAR CO., LTD. • WISCONSIN TRANSMISSION

Brings in Business...



HERE is a portrait of one of America's greatest salesmen... the Fire-Chief hat, familiar trade-mark of Texaco Fire-Chief gasoline.

This famous trade-mark is featured in striking Fire-Chief advertisements running *regularly* in the nation's leading magazines. And *two* great coast-to-coast radio programs — plus billboards all over America — also sell Fire-Chief to car owners everywhere.

To put this trade-mark to work *locally*, Texaco makes available to its dealers toy Fire-Chief helmets imprinted with the dealers' names. Youngsters love these hats and wear them wherever they go. Just one more example of Texaco's localized follow-through for its dealers... another reason why *Texaco Dealers are busy dealers!*

THE TEXAS COMPANY



*A Great Line-up
for*
TEXACO DEALERS

Sky Chief and **FIRE-CHIEF** GASOLINES
HAVOLINE and TEXACO MOTOR OILS • MARFAK
CHASSIS LUBRICATION • REGISTERED REST ROOMS

Tune in: TEXACO STAR THEATRE presents the new Eddie Bracken show every Sunday night.
METROPOLITAN OPERA broadcasts every Saturday afternoon. See newspapers for time and stations.

PERMATEX

Quality

CHEMICAL PRODUCTS

What's 50 miles between friends?



There was a time when it was an almost insurmountable obstacle.

Now Grandson and Grandpop are buddies who can see each other every other week or so.

It's not enough to say the automobile worked this change—because the original automobile alone didn't. Many of us can remember when 50 miles was a long, tiring trip over not-too-good roads.

But companies like General Motors saw that as they made cars better, sales would increase. More cars would be used—roads improved—distances shortened.

So regularly, year after year, they set aside part of their earnings to improve their product and widen its usefulness to the public.

In a steady, never-ending pursuit of progress, they put their time, effort and money into improving everything about the automobile.

What resulted? Better cars, better travel-by-highway, and suburban living. Bigger factories, too—and more pay envelopes than ever.

Car dealers, as you well know, have built businesses everywhere. And you've seen the good things a thriving dealership can bring to a community—jobs for many people,

money spent locally in running a business, meeting pay rolls, paying taxes.

Such are the benefits that stem from a *prospering* nation-wide industry. For, obviously, only a business with continuing earnings could have paid for the pursuit of progress—for knocking down the barriers of distance, giving Grandpops a chance to know Grandsons.

That's why we say *all the people* profit when a business prospers.

On the Air:
HENRY J. TAYLOR, coast to coast, twice weekly.
See your local newspaper for time and station.

GENERAL MOTORS

"MORE AND BETTER THINGS FOR MORE PEOPLE"

*The People profit
when a Business prospers*



CHEVROLET • PONTIAC • OLDSMOBILE • BUICK • CADILLAC • BODY BY FISHER • FRIGIDAIRE • GMC TRUCK & COACH • GM DIESEL

STOP COMEBACKS!



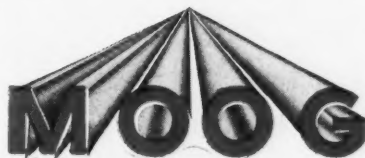
Sure, you have heard that before, but have you installed Moog X-Plus Piston Rings! To give your customers a FULL POWER overhaul you will find the Moog set-up is designed to lick trouble — take worn, balky, oil pumping motors and make them behave.

Get wise — next time install Moog X-Plus Piston Rings, give your customers a real FULL POWER job and stop comebacks.

Ask your jobber or write us for FULL POWER FACTS today, Moog Piston Ring Co., Division Moog Industries, Inc., St. Louis 14, Mo.

See us at the
ASI SHOW
Booths Nos. A-801, A-802, A-803, A-703

*The Moog X-Plus Steel Oil Ring is the back bone of the Moog overhaul set-up. A different type ring for each groove — each ring has its job and does it — Delivers FULL POWER.



X-PLUS PISTON RINGS

(U. S. PAT. NO. 1,771,198)

MOOG IS THE BUY-WORD FOR SPRINGS AND COIL ACTION PARTS

COPYRIGHT 1946 MOOG INDUSTRIES, INC.

DECEMBER, 1946

When writing to advertisers please mention Motor Age

5

MOTOR AGE, Vol. LXVI, No. 1. Published monthly by Chilton Co., Chestnut & 56th Sts., Phila. 39, Pa. Entered as Second-Class Matter December 27, 1935, at the Post Office at Philadelphia, Pa.; Under the Act of Congress of March 3, 1879. In case of Non-Delivery Return Postage Guaranteed. Subscription price: United States, Mexico, United States Possessions, and all Latin-American countries, \$2.00 per year. Canadian and foreign, \$3.00 per year; single copies, 25 cents.

A REVOLUTIONARY IMPROVEMENT IN FUEL FILTER OPERATION

AIRTEX DIAPHRAGM DAMPER

REDUCES FUEL-PUMP PULSATION IN THE FUEL LINE TO A SMOOTH FLOW OF GASOLINE TO THE CARBURETOR.



DIAPHRAGM AND SUPPORTING SPRING ASSEMBLY

Patents Applied For

The AIRTEX Spring-Supported DIAPHRAGM Assembly acts as a shock absorber in the fuel line, reducing pulsating gasoline flow to a smooth, steady stream.

The smoother flow of fuel cuts down needle valve wear in the carburetor and strain on the fuel pump, and improves fuel pump valve action.

The sharp diaphragm oscillations at starting and open throttle tend to sweep dirt particles clear of the filter disc and keep it clean.

AIRTEX

(Self-Cleaning)

GASOLINE FILTER

WITH "Pulsation Absorbing"
DAMPER

THE FUEL FILTER with Improved RENEWABLE METAL FILTERING ELEMENT

The porous bronze filter disc restricts the flow of any particle larger than 1/1000 inch—much finer than the fuel pump screen—giving a substantial additional margin of protection.

Reduces wear and tear on carburetor and engine, prevents carburetor clogging and motor stalling. Removes dirt, lint, water, abrasive particles and other foreign matter from the fuel before it flows into the carburetor.

Guards against costly "CARBURETOR CLOG"

ORDER A DISPLAY CARTON OF 12 FROM YOUR JOBBER

AIRTEX AUTOMOTIVE DIVISION

Chefford Master Mfg. Co.
FAIRFIELD, ILL.



Handles
Molded Lumarith
A Celanese Plastic

HOLLOWELL "AUTO" KIT

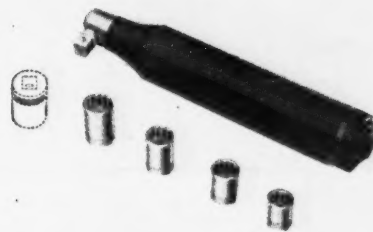
with interchangeable parts

Clutch Head bits, Flat bits, Phillips bits, a Tapered Reamer — all in the handle of this compact, self-contained kit! They are a carefully selected assortment of tools — universally adaptable — in a kit designed, (after lengthy experiment) — to help simplify the task of auto repairing and maintenance.

The Hollowell "Auto" Kit eliminates many steps and toting of cumbersome tools. And it's easy to use: simply select the tool you need from the handle, insert it in the locking swivel bit-chuck — and it is ready for use.

The Hollowell "Auto" Kit is as rugged as any all metal tool . . . made according to rigid Standard Pressed Steel standards. Handle is of durable Celanese[®] plastic; tools of high grade alloy steel.

Write for booklet that fully describes the "Auto" Kit and the other Hollowell Kits: "Socket Wrench," "Socket Screw," and the "Home" Kit. You'll find them the "tool box" you've always wanted. Available at Hardware and Mill Supply Stores throughout the country. If your Distributor does not carry these kits, send his name to us, along with yours, and you will be taken care of promptly.



"SOCKET WRENCH" KIT

Above: The "Socket Wrench" Kit — containing socket for six and 12 point hex nuts and bolts. In two sizes.

*Reg. U. S. Pat. Off.

OVER 43 YEARS IN BUSINESS

Kits: Patents Pending

STANDARD PRESSED STEEL CO.

JENKINTOWN, PENNA., BOX 531 • BRANCHES: BOSTON • CHICAGO • DETROIT • INDIANAPOLIS • ST. LOUIS • SAN FRANCISCO



FOR A
Merry Christmas
AND A
**HAPPY
NEW**

Make '47 your biggest, happiest year! Resolve now to stock LEAK-PROOF Piston Rings! They're new—they're different! They're designed to work together—to do all *Four*! Never before has there been a set like LEAK-PROOF—never before has the future looked so bright, for LEAK-PROOF Piston Rings control the new postwar oils... any lubricating oil, in fact.

A NEW DEVELOPMENT OF McQUAY-NORRIS

YEAR



LEAK-PROOF PISTON RINGS

GUARANTEED
TO DO ALL 4



KEEP
OIL
DOWN



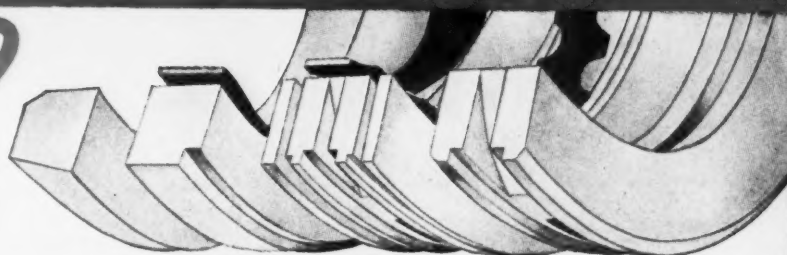
GIVE SMOOTH
NEW MOTOR
OPERATION



KEEP
POWER
UP



GIVE
LONGER
LIFE



Yes **GUARANTEED**

... guaranteed to give satisfactory performance for 10,000 miles or one year, whichever shall occur first, under the McQuay-Norris LEAK-PROOF Piston Ring Replacement and Labor Guarantee available upon request.

MANUFACTURING CO. ST. LOUIS 10, MO. U.S.A.

Now...
**MORE THAN
EVER BEFORE**

NEW CAR OWNERS TIRE QUALITY THEY

General's Change-over Plan for car dealers makes a change over from factory equipped tires to Top Quality Generals an automatic part of every standard new car sale. That's why the present-day attitude of new car buyers is so important to General Tire Dealers. Today... the new car buyer... more than ever before... *wants the extra protection of all the tire quality he can buy.*

The General Change-over Plan gives you *extra profits* from every new car sale without adding to overhead... provides greater profits from your sales department with no increase in sales manpower.

With a General Tire Franchise you represent America's Top-Quality Tire... known far and wide for its extra mileage... extra safety... top performance... *a tire that costs more because it's worth more.*

The General Tire Car Dealer Plan is available NOW to qualified dealers. Make all the money you can from your car dealership! Write for details today.



THE GENERAL TIRE & RUBBER CO.

AKRON 1, OHIO


**The
GENERAL
TIRE**

WANT ALL THE CAN BUY...



GEORGE HIGBEE
Manager

For Demonstrated Transportation
CHEVROLET
Product of General Motors

GROSSMAN CHEVROLET COMPANY
1300-1322 East Lake Street
MINNEAPOLIS 7, MINN.

DREXEL 344

Mr. L. A. McQueen
The General Tire & Rubber Co.
Akron, Ohio

October 3, 1946

Dear Mr. McQueen:

The Grossman Chevrolet Company was established in 1919 and we have sold Chevrolets exclusively since that time. By 1941 we had twenty-five people on our sales force and most of them were new car salesmen.

In 1938 when General introduced the Changeover Program on Dual 8's and 10's, we immediately equipped all our demonstrators with General Tires. We found out very promptly then that General's Changeover Program required little sales effort, and resulted in very gratifying customers' satisfaction and repeat business. The quality of General Tires was never questioned by the buying public.

General's policy of price protection, the cooperation of the entire General Tire organization plus the sales help you have furnished us have contributed greatly to the splendid success of your car dealer Changeover Program. We look forward to many more successful years of association with General Tire.

Yours very truly,

GROSSMAN CHEVROLET COMPANY

By *George Higbee*
George Higbee, Manager

GH:ed

SOON
General's Great
Post War Premium
Tire. Watch for First
Announcements!



IN CARS

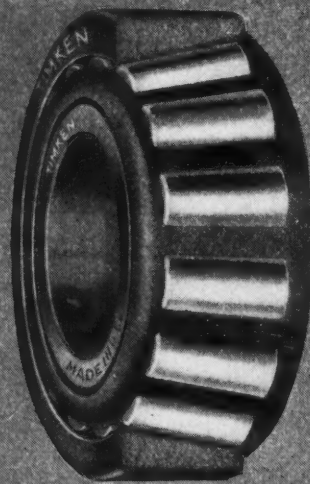
AND TRUCKS

AND BUSES

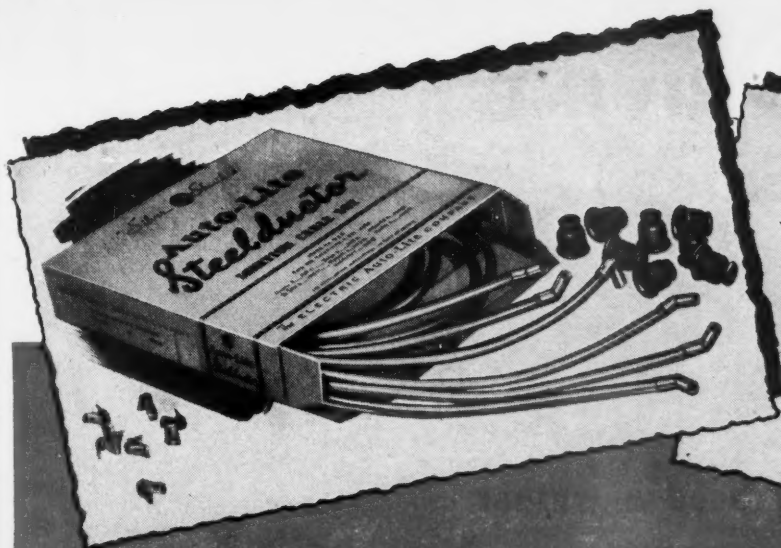
Soon new models will be rolling off the assembly lines. Blazing with color and brilliant trim none will lack eye appeal. Important as is outward appearance, it is **PERFORMANCE** that counts.

In most of the cars and trucks and busses you will find Timken Tapered Roller Bearings. Hidden away in wheels, pinions, differentials and steering parts most of them will never be seen, yet they will perform faultlessly.

Manufacturers selected Timken Bearings because no other tapered bearing has performed so well so long. To make sure of getting Timken Bearing benefits in your equipment see that the trade-mark "TIMKEN" is stamped on every bearing you use. The Timken Roller Bearing Company, Canton 6, Ohio.



TIMKEN
TRADE-MARK REG. U. S. PAT. OFF.
TAPERED ROLLER BEARINGS



The Auto-Lite wire and cable line is the complete line—for both high tension and low tension systems, including the famous Steelductor spark plug wire.

Auto-Lite Battery Cable with Anti-Corrode terminals is the type used as original factory equipment on 15 makes of cars.

*Switch
to —*



AUTO-LITE

AUTOMOTIVE WIRE & CABLE

Find out why dealers coast to coast are switching to Auto-Lite wire and cable, "the complete line." Check the advantages of Auto-Lite quality leaders like Steelductor spark plug wire and Anti-Corrode battery terminals. Investigate the 4-way advantage of the Auto-Lite Registered Service Dealer plan: (1) Registered Service, (2) Contract Price, (3) Adequate Inventory, (4) National Advertising. For complete information, write to

THE ELECTRIC AUTO-LITE COMPANY

Toronto 1, Ontario

Toledo 1, Ohio



Display the RSD sign... cash in on Auto-Lite national advertising and big time network radio promotion to boost sales and service on everything you sell.

Tune in the Auto-Lite Radio Show Starring Dick Haymes—Thursday Nights, 9:00 P. M.—E.T. on CBS

DECEMBER, 1946

When writing to advertisers please mention Motor Age

13

FOR SAFE DRIVING (and More Sales)

Sell all 3

SPLASH... They need a washer



At the touch of a button the Trico Windshield Washer squirts the glass with two jets of water. A swing or two of the wiper blades completes the cleaning job. Every motorist needs one. Easy to install.

STEAM and FOG... They need a fan



Removes steam and condensation from the inside of the windshield. Helps prevent ice formation on the outside. A wonderful aid to safer driving in any season and any climate. Trico Fans are furnished with universal attachment brackets for easy installation.

RAIN... They need a wiper



There's profit for you in blade and arm replacements—steady sales if you get the habit of checking windshield wipers regularly. With the new Trico Service Kit, the right blade and arm replacement for ANY car is always in stock.

Clear driving vision is easy to sell from a standpoint both of safety and driving comfort. So don't neglect this sure source of plus business. Stock and sell Trico's *three* clear vision aids—Windshield Washers, Windshield Fans and Windshield Wiper Blades and Arms. All operate with cost-free Harnessed Air Power. All are easy to install.

TRICO

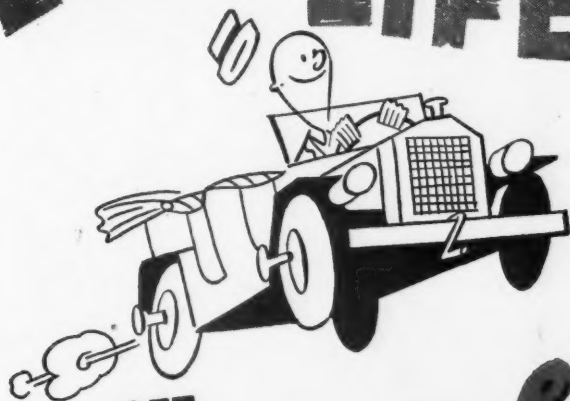
TRICO PRODUCTS CORPORATION, BUFFALO 3, N. Y.

Clear Vision Driving *thru*

Harnessed *Air* Power



for more power and
**LONGER
LIFE**



GET

Pedrick

**"HEAT-SHAPED"
PISTON RINGS**



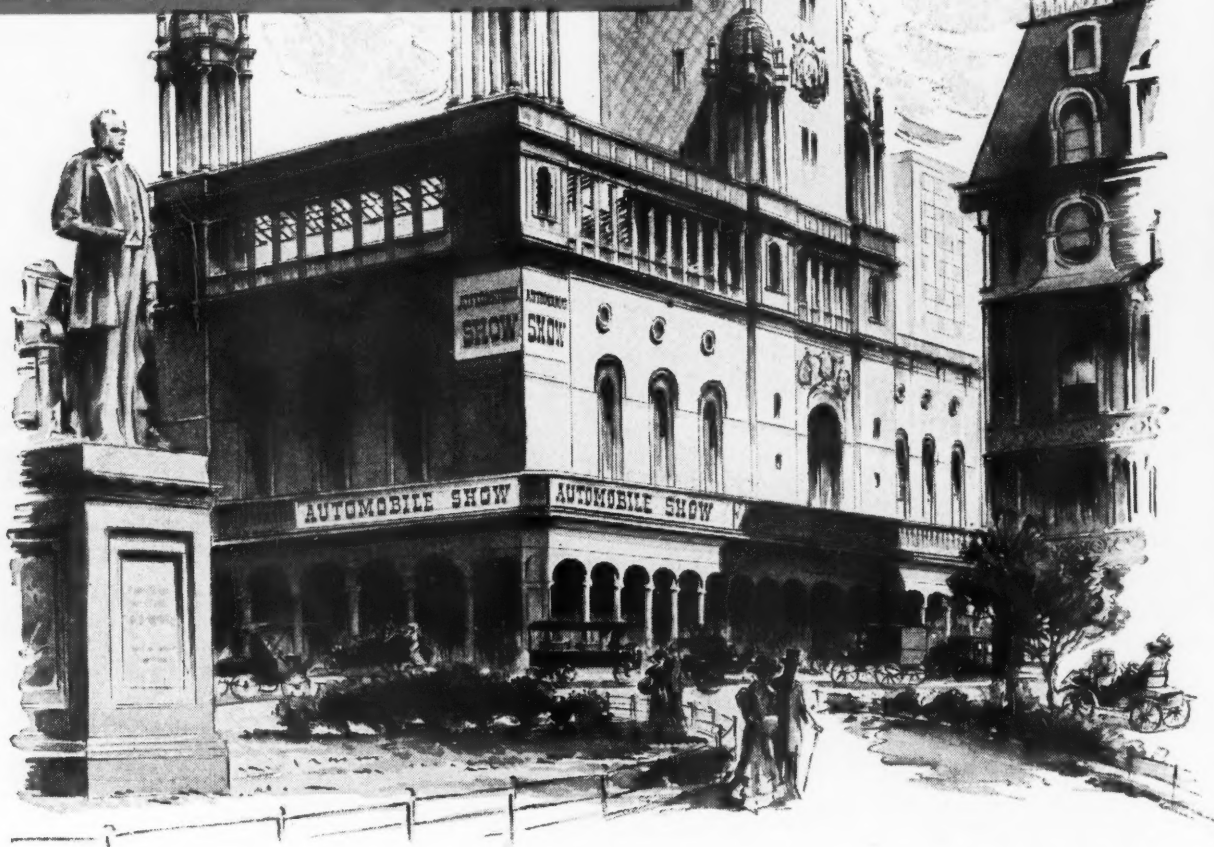
YOU CAN GIVE your customers far better engine performance with piston rings that are "Heat-Shaped." Why? Because "Heat-Shaped" rings have better shape, more accurate tension, seat more quickly and perfectly against both cylinder wall and piston land. Thus, better control of blow-by and oil, more power, longer life. And only PEDRICK piston rings are "Heat-Shaped." Buy them in Engineered Sets for every make and model of engine you recondition.

WILKENING MANUFACTURING CO., Philadelphia 42, Pa. In Canada: Wilkening Manufacturing Co. (Canada) Ltd., Toronto.

AT THE TIME OF THE FIRST AUTO SHOW

WOLF'S HEAD

WAS OLD ENOUGH TO VOTE



Even before Madison Square Garden had its first auto show way back in 1900, motorists knew about top quality Wolf's Head Oil. In 1900 Wolf's Head had been refining specialized "finest of the fine" petroleum products for 21 years.

And just as Wolf's Head was the choice of early motorists, so it is the choice of car owners today.

For Wolf's Head laboratories have made it a policy to work along with engine designers. As automobile engines were improved and higher and higher speeds

developed, Wolf's Head was always ready with the oil necessary to assure "finest of the fine" lubrication for the newest in motor cars.

Today, Wolf's Head Motor Oil is the finest ever. For tomorrow, Wolf's Head promises that Wolf's Head will continue to keep abreast of new car developments—will continue to be the "finest of the fine" motor oil.

Wolf's Head Oil Refining Co., Inc., Oil City, Pa., New York 10, N. Y.

WOLF'S HEAD

MOTOR OIL AND LUBES

100% Pennsylvania



P.G.C.O.A. Permit No. 6

New Britain HAND TOOLS

ONE LINE COMPLETE FROM A TO Z



HOLDER-RETRIEVER
MH-15



HIGH SPEED DRILL SET
HSD-1160

From Adjustable Wrenches to Zerk Fitting Tools . . . here's the *complete* Line of Mechanics' Hand Tools that fits you for every automotive service job.

It's the New Britain Line of guaranteed performance—a widely varied stock of Hand Tools, standard and special, to help make easy work out of hard work.

You may be working on Motor, Body, Ignition, Brakes, Tires, Cooling System—no matter what the job on car, truck, tractor or bus, you'll find just about any Hand Tool you'll ever need in this one, great Line.

You're sure of highest quality in each New Britain Tool you buy. Famous New Britain Sockets, Speeders, Ratchets, and Wrench Sets have earned a solid reputation for Greater Strength and Better Fit. Get to know this good source of dependable Hand Tools for all Mechanics—ask your NAPA Jobber to show you the New Britain Line TODAY! The New Britain Machine Co., New Britain, Conn.



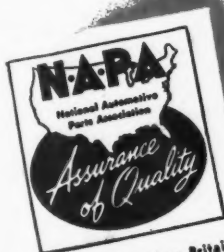
WRENCH SET
6033



CYLINDER RIDGE
REAMER R-173



VALVE JACK
VJ-100



The complete New Britain Line for Automotive, Air-craft, General Maintenance & Production Needs is sold by leading Jobbers.

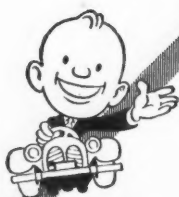
New Britain

GREATER STRENGTH · BETTER FIT **HAND TOOLS**

Here's Today's Best "Angle" for a Successful Charging Business

**Electronically
Controlled**

**Completely
Automatic**



GREATER
CUSTOMER SATISFACTION

MODEL F-125

FULL
100 AMPERE



SUBSTANTIALLY
GREATER PROFITS



▲ You just can't compare this new Allen F-125 with any other fast charger — because it's entirely different! — its entire operation from start to finish **COMPLETELY AUTOMATIC.**

▲ The Allen F-125 incorporates a brand new principle based on the wonders of electronics. It's almost human!

▲ All you do is **WATCH THE LIGHTS.** They tell you, and your customer, accurately and scientifically whether the battery can take a charge — if *not* the charger stops — if *so* the charger completes the job in record time.

▲ These three lights (mounted on handle as shown above) dramatize battery charging and testing to the point that *every* customer understands.

▲ Put your charging business on a highly profitable basis by acting **NOW!**

ALLEN ELECTRIC & EQUIPMENT CO., KALAMAZOO, MICHIGAN

*See This
Marvellous
Fast Charger*
...YOUR ALLEN
JOBBER HAS A
FLOOR SAMPLE

**WATCH
THE
LIGHTS**

— that's all you
do — that's all your
customer does!

*Another
Famous*

ALLEN

PRODUCT

Clean-Up

with the
**SENSATIONAL
NEW
ROCKET**
Jet-Powered
VACUUM CLEANER



FOR cleaning interiors, carpets and upholstery of cars, buses, planes, boats. Also for cleaning upholstered furniture, and work benches. Compact—Highly Efficient. Can be used wherever compressed air is available.

An absolutely essential item for every car dealer, service station and repair shop. No moving parts to get out of order. No fire hazard. Connects to air line. Uses but little more

air to clean a car than to inflate a set of tires.

Five minutes with a ROCKET and the car interior is spotlessly clean . . . no mechanic's cigarette ashes, dust, sand or dirt to start a complaint or put the customer in a critical mood. Makes Customers—Friends—and Profits!

MANAGEMENT & RESEARCH, INC.
Oak Lane and Secane Ave., Primos, Pa.



PRICE \$24.50

*including 25 ft. of hose.
West of Mississippi,
Price 5% higher.*

ROCKET
Jet-Powered
VACUUM CLEANER

3 RACES

3 WINS



REX MAYS WINS AGAIN

BOWES



with
SPARK PLUGS

When you enter 3 races and win all of them . . . you must be pretty good. Sure, Rex Mays is good . . . so is his car . . . the Bowes "Seal Fast" Special . . . and . . . so are the Spark Plugs he uses, Bowes Spark Plugs, of course. Mays, in the Bowes "Seal Fast" Special won the AAA 100 Mile Championship races at . . . Langhorne, Indianapolis and Milwaukee. It's a "Hot" combination . . . Rex Mays, the Bowes "Seal Fast" Special . . . AND . . . BOWES SPARK PLUGS.

**BOWES SPARK PLUGS
ARE WINNERS!**



"They Can Take It"

BOWES "SEAL FAST" CORPORATION, INDIANAPOLIS 7, INDIANA

Always check gas and oil filter lines... don't let your customers be "drips"

Make Your Own Hose Assemblies with the RESISTOFLEX LINEMAKER ASSORTMENTS!

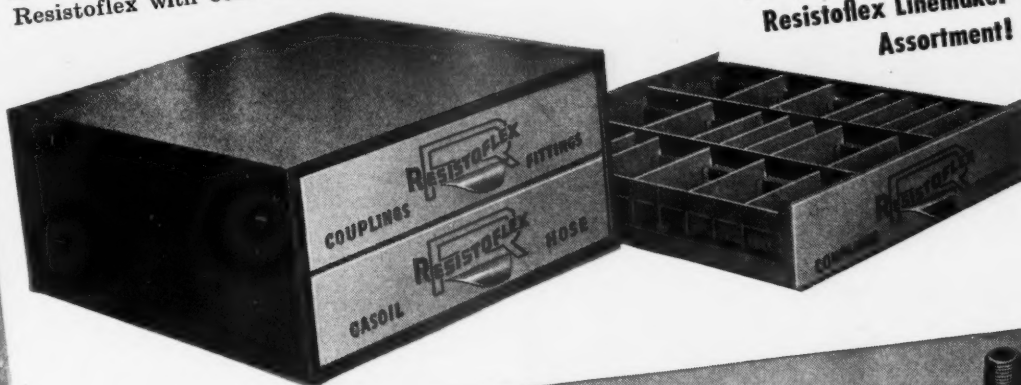
With the Linemaker Assortment, you can hand-assemble every type automotive hose and replace gas-oil hose on cars, trucks, tractors, marine engines with Resistoflex gas-oil hose with COMPAR tube.

Now you can give your customers the advantages of the one gas-oil hose that will not rot, clog, leak, break, swell, or collapse—Resistoflex with COMPAR tube.

Remember this: Resistoflex gas-oil hose with COMPAR tube is totally unaffected by all types of gasoline, gasoline additives, Diesel fuel, lubricating oils, crankcase additives. It is totally unaffected by vibration and bending. Bonded layer construction eliminates internal friction. It withstands more tension and torsion than hose of any other construction.



Ask your jobber for the Resistoflex Linemaker Assortment!



RESISTOFLEX

Trade Mark Reg. in U.S. & Can. Pat. Off.

Resistoflex Corporation
Belleville 9, New Jersey

PLANTS: Belleville, N. J.;
Elkhart, Ind.; Toronto, Can.

Original
Equipment
on vehicles,
vessels,
aircraft,
oil filters.

A complete line of re-usable
couplings . . . hose fittings.

The Only **PISTON GRINDER** *with* **INDICATOR CAMMING...**

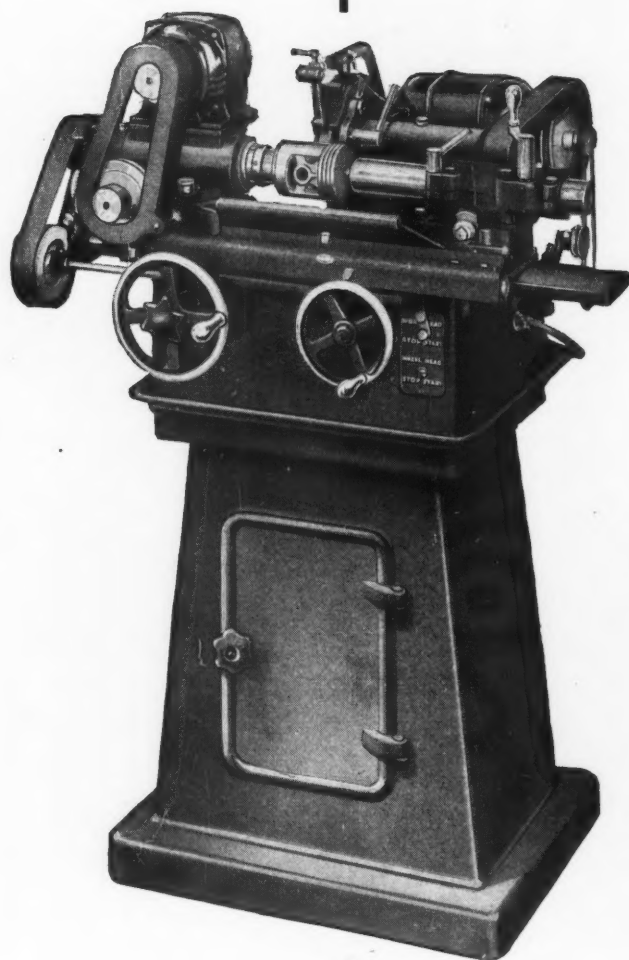
THE WATERBURY-Simplicity Piston Grinder is the only machine of its kind on the market with an Indicator Camming Device. With this ingenious attachment, it is possible to set the machine to handle a variety of camming jobs by merely setting the indicator at the size desired. There are no cams to lose, mislay, or sort through every time a different piston is to be ground, and no time lost changing cams.

With the WATERBURY-Simplicity Piston Grinder it is no longer necessary to carry a large stock of pistons and there is no delay in completing piston jobs. The real profits in a job come from doing all the work yourself with WATERBURY-Simplicity Precision Rebuilding Equipment.

Write us today for the name of your nearest distributor. Delivery will start early in '47. Place your order now so that you will receive one of the first machines off our production line.

WATERBURY TOOL

Division of VICKERS INCORPORATED
173 EAST AURORA ST.
WATERBURY 91, CONN.



LET'S SEE - GAS, WATER, OIL

WHOA!



BETTER ASK

"How's Your Oil Filter?"



Whoa, Mister—you're letting *extra profits* get away if you let your customers go without asking them, "How's your Oil Filter?" Try it—you'll be amazed at the sales magic packed into that simple question! Because most motorists answer, "I don't know." Then *you* find out!

Open the hood and make the Fram Dipstick Test. Examine oil on dipstick . . . if it's dirty*, tell the customer, "Your oil filter isn't doing you any good like this! You need a new Fram replacement cartridge to prevent unnecessary engine wear, breakdowns and repairs!"

If the car is *not* filter-equipped, tell

him: "I can install a complete Fram oil filter in a couple of minutes. A Fram will help your car keep rolling, because it removes grit, carbon and sludge that would otherwise grind away or gum up vital motor parts." Do this and you'll pick up plenty of quick extra sales—that add up to a mighty nice piece of change by the end of the month! Start today . . . call your Fram distributor now! Fram Corporation, Providence 16, R. I. In Canada: J. C. Adams Co., Ltd., Toronto, Ontario.

*Certain heavy-duty oils, due to the detergent additive used, will turn dark in color almost as soon as put into the engine. Where such oils are used, filter cartridges must be changed on a mileage basis.

FRAM Oil & Motor Cleaner
THE MODERN OIL FILTER



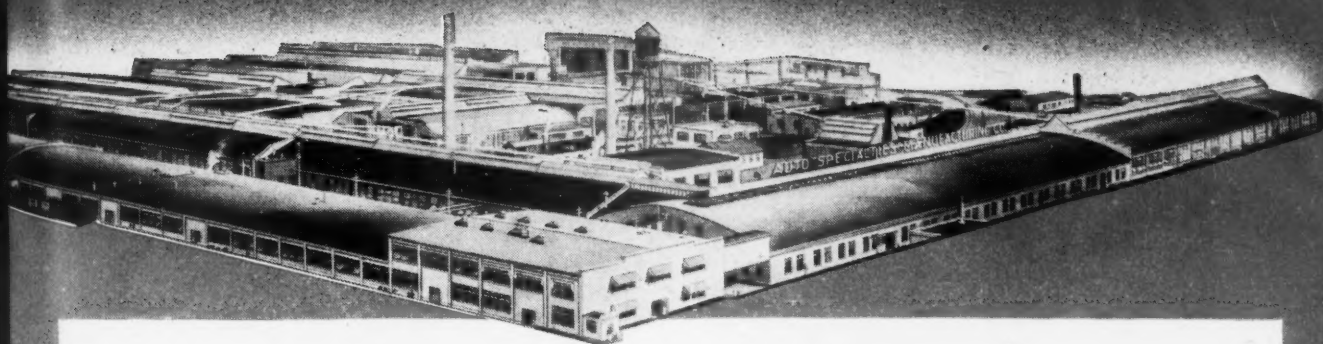
AUSCO'S 35

Watch **AUSCO***

for the Latest in Mechanical and Hydraulic Jacks All Fully Covered by Patents...Turning Their Exclusive Betterments to the Exclusive Advantage of Ausco Sellers and Users.

*Trademark Reg. U.S. Pat. Off.

Successful Years



...They Mean Profit...Satisfaction...for
the Men Who Sell and Use the New

AUSCO *Mechanical* *and Hydraulic JACKS*

To succeed in retail selling, deal with successful firms. To buy a dependable article, buy from a successful manufacturer. Why? Because that company's success is only a reflection of the success of its sellers, the satisfaction of its users. Ausco has been the top-flight success for 35 years... because no man can sell better jacks than Auscos, and no man can ask for better jacks for car or garage than Auscos. They're built of the best, they're designed by multi-million-jack experience. *The jacks that succeed today were pioneered yesterday by Ausco; the jacks of tomorrow are being launched by Ausco today...* AUTO SPECIALTIES MFG. COMPANY, ST. JOSEPH, MICHIGAN, U.S.A., WINDSOR, ONTARIO, CANADA.

1966

TODAY EXCELS YESTERDAY



TOMORROW EXCELS TODAY

THIS IS CHEVROLET'S 35th ANNIVERSARY YEAR

*... and we're going forward together —
you and Chevrolet!*

AS ALL Chevrolet dealers know, November 3, 1946, marked Chevrolet's 35th Anniversary as an automotive manufacturer; and all the accomplishments of these past thirty-five years are but stepping stones to even greater service, and even greater leadership-born-of-service, for Chevrolet and its dealers, in the months and years immediately ahead.

You know the story to date; every automobile dealer knows it; all America knows—and respects—it.

In 1911, the Chevrolet Motor Company was established in a tiny plant at Detroit, Michigan, with the ultimate objective of supplying quality at low cost to the motor car buyers of America.

In 1946, the Chevrolet Motor Division of General Motors is recognized as the pace-maker of America's largest manufacturing industry, with the record of having produced and sold more cars and trucks during the past sixteen years than any other automotive manufacturer.

The thirty-five years between 1911 and 1946 have witnessed Chevrolet's steady allegiance to its policy of giving quality at low cost—steady pioneering of improvement after improvement in the lowest-price field—steady advance to a higher and higher position in popular esteem; and, as every alert automotive dealer knows, the character and caliber of Chevrolet leadership point to a continuation of this same cycle of service and growth, growth and service, in the months and years which lie ahead.

It is a working rule in every department of Chevrolet that today excels yesterday, tomorrow excels today; and, by this same token, Chevrolet's 35th Anniversary—and all the accomplishments of Chevrolet's 35 years of motor car manufacture—are but stepping stones to even greater achievements for Chevrolet and its dealers in the future.

CHEVROLET MOTOR DIVISION General Motors Corporation
DETROIT 2, MICHIGAN

**YES, WE'RE GOING
FORWARD TOGETHER—**

YOU AND

CHEVROLET



**Year after year
FIRST WITH THESE "BESTS"
in lowest-priced cars**

Chevrolet has pioneered many major improvements in lowest-priced cars during the last thirty-five years—of which the following are only a few:

- Unisteel Body Construction
- Knee-Action Gliding Ride
- Valve-in-Head Engine
- Syncro-Mesh Transmission
- Box-Girder Frame
- Double-Articulated Brake Shoes
- Shockproof Steering
- Hypoid Rear Axle
- Turret Top Body Construction
- "Blue-Flame" Combustion Chamber
- Stabilized Front-End Mounting
- Complete Body Insulation
- Safety Plate Glass All Around
- Specialized 4-Way Lubrication
- Tiptoe-Matic Clutch
- Duco Finish
- Concealed Safety-Steps
- Combined Crankcase Ventilator, Oil Filler and Oil Separator
- Electric Starting Motor
- Foot-Controlled Headlamp Dimmer Switch

**Year after year
QUALITY'S REWARD—PUBLIC FAVORITE**

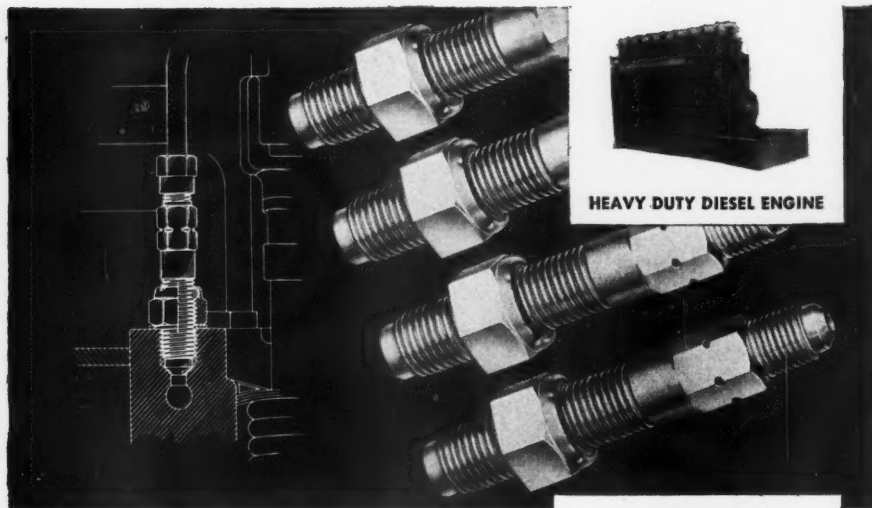
AMERICA HAS PURCHASED MORE CHEVROLET CARS AND TRUCKS THAN ANY OTHER MAKE DURING THE SIXTEEN-YEAR PERIOD DATING FROM 1931 TO 1946, INCLUSIVE

(According to official R. L. Polk & Company registration figures)

SELF-SEALING

*Prevents
Oil Seepage*

ALONG FUEL LINE STUDS



HEAVY DUTY DIESEL ENGINE

*The Red Elastic Collar seals the threads
tight against LIQUID SEEPAGE*

Three important benefits result from the use of ESNA Elastic Stop Nuts on Diesel engine fuel line studs. *First*, operational safety. The Red Elastic Collar is self-sealing against fuel oil operating pressures up to 60 psi. *Second*, design simplification. The Red Elastic Collar is self-locking anywhere on the stud. It permits the use of straight threads—instead of individually gauged tapered threads—for the oil supply block connection. *Third*, faster assembly. Straight threads permit the accurate positioning of the studs between the block and fuel line—before the finished surface of the Elastic Stop Nut is fully seated and self-locked and self-sealed against the copper washer. The total result? Threefold economy!

Multiple protection—against Liquid Seepage, Vibration, Corrosion, Thread Failure and Costly Maintenance—has made Elastic Stop Nuts the standard fastener on many products. Standardization achieves the double economy of inventory simplification and reduced procurement costs. For further information address: Elastic Stop Nut Corporation of America, Union, New Jersey. Sales Engineers and Distributors are located in principal cities.

ESNA
TRADE MARK

ELASTIC STOP NUTS



INTERNAL
WRENCHING



ANCHOR



INSTRUMENT
MOUNTING



SPLINE



CLINCH



GANG
CHANNEL

PRODUCTS OF: ELASTIC STOP NUT CORPORATION OF AMERICA

Where to buy

ESNA
TRADE MARK



**ELASTIC
STOP NUTS**

DISTRIBUTORS

Nichols, Dean & Gregg, **ALBERT LEA**, Minn.
Carey Machinery & Supply Co., 119 E. Lombard St., **BALTIMORE**, Maryland
Chandler & Farquhar Co., Inc., 900 Commonwealth Ave., **BOSTON 16**, Mass.
A. N. Nelson, Inc., 370 Hamilton Avenue, **BROOKLYN**, New York
Beals, McCarthy & Rogers, Inc., 50 Terrace, **BUFFALO**, New York
Globe Machinery & Supply Co., 205-209 Third Ave., **CEDAR RAPIDS**, Iowa
Supplies, Inc., 564 W. Adams St., **CHICAGO 6**, Illinois
The E. A. Kinsey Co., 335 W. 4th Street, **CINCINNATI 2**, Ohio
Strong, Carlisle & Hammond, 1392-4 West Third St., **CLEVELAND 13**, Ohio
Smith Bros. Hardware Co., 580 No. 4th St., **COLUMBUS**, Ohio
M. D. Larkin Co., 115-123 East Third St., **DAYTON 1**, Ohio
M. L. Foss, Inc., 1901 Arapahoe St., **DENVER**, Colorado
Globe Machinery & Supply Co., 205-211 W. Court Ave., **DES MOINES**, Iowa
Charles A. Strelinger Co., 149-165 E. Larned St., **DETROIT**, Michigan
Kulseth Supply Co., **FERGUS FALLS**, Minn.
J. Russell & Co., Inc., 361 Dwight Street, **HOLYOKE**, Mass.
Honolulu Iron Works Co., **HONOLULU**, T. H.
Peden Iron & Steel Co., 700 No. San Jacinto St., **HOUSTON**, Texas
Central Rubber & Supply Co., 120 So. Meridian St., **INDIANAPOLIS 9**, Indiana
The Faeth Company, 1608-14 McGee St., **KANSAS CITY 8**, Missouri
Emco Supply Co., Inc., P. O. Box 907, **LANESFORD**, Pennsylvania
John Pritzlaff Hardware Co., 333 No. Plankinton Ave., **MILWAUKEE 1**, Wisconsin
Minneapolis Iron Store, 524-528 Washington Ave., N., **MINNEAPOLIS**, Minn.
Uptown Iron Store, 918 W. Lake St., **MINNEAPOLIS**, Minn.
Globe Machinery & Supply Co., **MOLINE**, Ill.
C. S. Mersick Co., 278 State St., **NEW HAVEN 7**, Conn.
Nichols, Dean & Gregg, **NEW ULM**, Minn.
Taylor-Parker Co., Inc., Water and Commercial Place, **NORFOLK 1**, Virginia
Standard Shannon Supply Co., 13 So. Letitia St., **PHILADELPHIA 6**, Pennsylvania
Nichols, Dean & Gregg, **PIPESTONE**, Minn.
Sommers, Fittler & Todd Co., 327 Water Street, **PITTSBURGH 30**, Pennsylvania
Nichols, Dean & Gregg, **ROCHESTER**, Minn.
Nichols, Dean & Gregg, 117 W. Fifth St., **ST. PAUL 2**, Minn.
Northwest Bolt & Nut Co., 4502 Fourteenth Ave., N.W., **SEATTLE 7**, Washington
M. D. Larkin Co., **SPRINGFIELD**, Ohio
Syracuse Supply Co., 314-318 W. Fayette St., **SYRACUSE**, New York
Mill & Factory Supply Co., 622 Southard Ave., **TOLEDO**, Ohio
E. Keeler Co., 238 West St., **WILLIAMSPORT**, Pennsylvania
Brierly, Lombard and Co., Inc., 107 Foster Street, **WORCESTER**, Mass.
Nichols, Dean & Gregg, **WORTHINGTON**, Minn.

SALES OFFICES AND SALES ENGINEERS

A. K. Whitaker, 4076 Powers Ferry Rd., N.W., **ATLANTA**, Georgia
W. A. Laffer, 4922 Ivanhoe Avenue, **BALTIMORE 12**, Maryland
20 North Wacker Drive, **CHICAGO 6**, Illinois
1838 Euclid Avenue, **CLEVELAND 15**, Ohio
522 New Center Building, **DETROIT 15**, Mich.
821 Merchants and Manufacturers Building, **HOUSTON**, Texas
Collins-Powell Company, 9247 Alden Drive, **LOS ANGELES**, Beverly Hills, Calif.
Jas. W. Pyke & Co., Ltd., 888 St. James Street, West, **MONTREAL**, Quebec
115 Broadway, **NEW YORK 6**, New York
P. D. DeWitt, 313 East Welsh Road, **PHILADELPHIA**, Willow Grove, Pa.
H. J. Forst, 225 Catalpa Place, **PITTSBURGH 16**, Pennsylvania
2330 Vauxhall Road, **UNION**, New Jersey

The application advertisement shown opposite this column explains the permanent protection provided by all types of Elastic Stop Nuts.



Keep 'em Happy with the "Real Thing!"

Yes, you'll always keep 'em happy with the "real thing!" And that goes for replacement parts for your customers' cars and trucks, too!

It pays to install *MoPar* factory engineered and inspected parts. They are the "real thing" for vehicles built by Chrysler Corporation Divisions.

Because they are made to the same exacting specifications as the original factory-installed parts, they fit right . . . last longer. They give good performance—and build customer satisfaction.

NOTE TO ALL REPAIR SHOPS

If you need parts of any kind for a Plymouth, Dodge, De Soto, or Chrysler passenger car, or Dodge "Job-Rated" Truck, obtain them from a dealer for these vehicles.



Plymouth

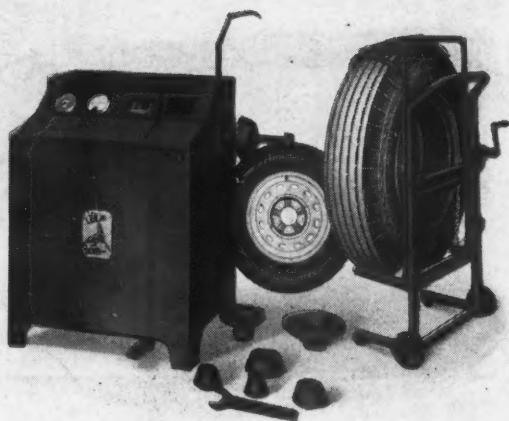
DODGE

DeSoto

CHRYSLER

DODGE Job-Rated TRUCKS

**CHRYSLER CORPORATION—PARTS DIVISION
DETROIT 31, MICHIGAN**



*"Considering
SPEED, ACCURACY AND
CUSTOMER SATISFACTION*

SCHILDMEIER
**SEAL LINE IS BEST
IN BALANCING EQUIPMENT"**

Says-

MR. F. W. BROUWER

BROUWER TIRE & BATTERY SERVICE
FORT WAYNE, IND.

You will balance more truck, bus
and auto wheels per day on a SEAL
LINE. More profit per day! It's sim-
ple to operate. One glance at the in-
struments shows you instantly the
exact amount and position of each
weight. Dynamic and Static balance-
ing, speeds up to 100 M.P.H. cus-
tomers are satisfied, no road testing,
no jobs to do over . . . on a SEAL
LINE.

Write For Full Details.

REMEMBER SEAL LINE
The Fastest Thing on Wheels

H. C. SCHILDMEIER CO.

310 N. SENATE AVE.

INDIANAPOLIS 2, INDIANA

MOTOR AGE

With Which Is Combined AUTOMOBILE TRADE JOURNAL

FOR AUTOMOTIVE SERVICEMEN

VOL. LXVI, No. 1

December, 1946

JULIAN CHASE, Vice-Pres. and Directing Editor

W. K. TOBOLDT, Editor
CHARLES M. KENTON, Managing Editor J. K. MONTGOMERY, Tech. Editor
RICHARD L. REDDY, Tech. Editor S. B. TAYLOR, Asst. Editor
HOWARD KOHLBRENNER, Art Director JOHN C. HILDRETH, JR., Research Editor
LEONARD WESTRATE, Detroit News Editor J. A. LAANSMA, Detroit Tech. Editor
M. AINSWORTH, Specification Editor J. A. LAANSMA, Merchandising Editor
R. RAYMOND KAY, Pacific Coast Editor L. W. MOFFETT, Washington Editor
E. J. HARDY, Washington News Editor KARL RANNELLS, Washington News Editor

In This Issue

| | |
|--|-----|
| News Bulletin | 33 |
| Slants on the News..... | 34 |
| Black Market Prices Sky Rocket..... | 36 |
| Auto Dealer Sells Planes.....by Leonard Westrate | 37 |
| Pop Tames a Rough Rider.....by J. Edward Ford | 38 |
| Motion Stops the Public..... | 40 |
| Sell Chains For Safety.....by Richard L. Reddy | 41 |
| The Fisher Craftsmans Guild..... | 42 |
| Aligning Doors on G M Cars..... | 44 |
| Sales Resistance Plus.....by Harold Severson | 45 |
| How to Recharge Batteries..by William H. Crouse | 46 |
| The DeSoto Suburban..... | 48 |
| Motor Age Picture Gallery..... | 49 |
| Frank the Fixer (Cartoon)..... | 52 |
| Selling Power.....by Ed Hevner | 53 |
| Shop Kinks | 54 |
| Motor Age News..... | 56 |
| 1946 Engine and Tune-up Specifications..... | 58 |
| Readers' Clearing House..... | 59 |
| New Products | 62 |
| Legally Speaking | 118 |
| Advertisers' Index | 154 |

Copyright 1946 by Chilton Company (Inc.)

G. C. BUZBY, President and Manager Automotive Division
E. H. MILLER, Adv. Mgr. E. W. HEVNER, Cir. Mgr.

REGIONAL BUSINESS MANAGERS

F. O. KIRKPATRICK, Chicago J. A. LAANSMA, Detroit
HARLAND E. BOYD, Cleveland A. B. ECKEL, New York
RUSSELL W. CASE, JR., Philadelphia C. H. WOOLLEY, San Francisco
AUGUST HAUBIN, JR., Los Angeles

Offices: Philadelphia 39, Pa.—Chestnut & 56th Sts., Phone 8Herwood 7-1494.
New York 17, N. Y.—100 E. 42nd St., Phone Murray Hill 5-8800, Chicago 1,
Ill.—Room 916 London Guarantee & Accident Bldg., Phone Franklin 4243.
Detroit 2, Mich.—1015 Stephenson Bldg., Phone Madison 2090, Cleveland 14,
Ohio—1030 Guardian Bldg., Phone Cherry 4188, Washington 4, D.C.—1061 National
Press Bldg., Phone District 8109, 8110, San Francisco 5, Cal.—605 Market St.,
Room 408, Phone Sutter 4951, Los Angeles 1, Cal.—6000 Miramonte Blvd.,
Phone Lafayette 5525. Member of Audit Bureau of Circulations. Member of
Associated Business Papers, Inc. Subscription Price: United States and Possessions,
Latin-American Countries, \$2.00 per year; Canada and foreign, \$3.00 per year.
Single copies, 25c.

Owned and Published by
① CHILTON COMPANY (INC.) ①

Executive Offices
Chestnut and 56th Streets, Philadelphia 39, Pa., U.S.A.

Officers and Directors

Jos. S. HILDRETH, President

Vice-Presidents

EVERIT B. TERHUNE P. M. FAHRENDORF JULIAN CHASE
THOMAS L. KANE G. C. BUZBY CHARLES J. HEALE
WILLIAM A. BARBER, Treasurer JOHN BLAIR MOFFETT, Secretary
HARRY V. DUFFY T. W. LIPPERT FRED V. COLE

WILLIAM H. VALLAR, Asst. Treas.

PAUL WOOTON, Washington Member of the Editorial Board

WEIDENHOFF

BATTERY FAST CHARGER



FEATURING
BUILT-IN
FACILITIES
FOR
CYCLING OF
BATTERY
AUTOMATICALLY

PROTECT YOUR CUSTOMER'S BATTERIES

Cold weather is tough on batteries. New ones are hard to get. Lights are used longer during the shorter winter days. Now, as never before, service stations and shops must protect customers' batteries.

One of the best ways to prolong battery life is to give them a boost charge when necessary with the Weidenhoff charger. It's easy to use and start of charge comes in automatically with visual indication by red and green lights.

Large transformer, no overheating. Cables are extra heavy to minimize voltage drop. High capacity 100 amp. rectifier.

Write or wire the factory NOW.



Easily rolled between closely parked motor vehicles. Operator has right before him all the controls, meters, signal lights and full instructions on the inside of protecting lid. With the lid down the meter and controls are protected.

ENGINE ANALYZERS • BATTERY CHARGERS • MAGNETO TESTERS

JOSEPH
WEIDENHOFF
INC.

CHICAGO 24, ILLINOIS

TEST BENCHES • ELECTRICAL TESTING AND SERVICE EQUIPMENT





NOT 2...



NOT 6...

but **26**

basic designs

OF SEALED POWER PISTON RINGS

LOW FRICTION is vital to balanced performance in piston rings. Sealed Power Individually Engineered Ring Sets insure low friction, as well as oil control, blow-by control, and minimum wear—the BIG FOUR requirements for piston ring satisfaction. Each Sealed Power Set is selected from twenty-six (26) basic designs of piston rings. Whatever the make, model or cylinder wear condition, there's a Sealed Power Set specifically engineered to do the best possible job. Sealed Power has been refining these sets for seven years, has been producing rings for car, truck and engine builders 35 years. For balanced performance, re-power with Sealed Power motor parts. Sold by leading distributors. Sealed Power Corporation, Muskegon, Mich. and Stratford, Ont.

Piston Rings, Pistons, Cylinder Sleeves, Piston Pins, Valves, Water Pumps, Bolts, Bushings, Tie Rods, Front End Parts



INDIVIDUALLY ENGINEERED



SEALED POWER PISTON RINGS

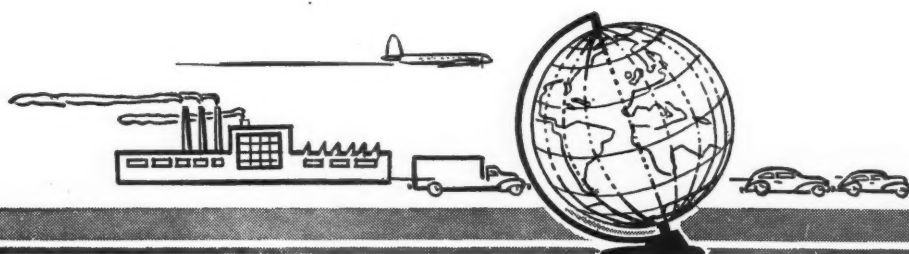
BEST IN NEW CARS! ★ BEST IN OLD CARS!

Keep your War Bonds!
Get \$4 for \$3!



NEWS BULLETIN

- ★ Price increases ranging from \$8 on Plymouth to \$104 on Chrysler sedans announced by Chrysler.
- ★ Electric-Auto-Lite forced to close for several days because of copper shortage.
- ★ Packard starts 5 million dollar marine engine building program.
- ★ American Fair Trade Council is being deluged with requests from manufacturers on how to establish and maintain minimum prices.
- ★ Production on Willys station wagons now exceeding 500 per week.
- ★ Strike at Allis Chalmers now in seventh month.
- ★ Studebaker passenger car prices up about 3½ per cent with a maximum of \$64. Champion four door sedan now \$1275 and Commander is \$1520.
- ★ Increased lead allotment to permit manufacture of 450,000 additional starting batteries.
- ★ To circumvent higher coal prices and future strikes, more oil and natural gas pipe lines will be laid.
- ★ Unemployment increases as a result of coal strike.
- ★ Ford announces termination of Ferguson tractor deal and formation of a new company to make new tractor and farm equipment.
- ★ Most Detroit plants shut down for four-day Thanksgiving to conserve coal.
- ★ Frank R. Pierce resigned as G.M. vice-president to become president of Ford's new Dearborn Motor Corp., distributing tractors.
- ★ Fifteen most active jobber lines are piston rings, fan belts, mufflers, brake lining, shop equipment, batteries, engine bearings, chemicals, anti-freeze, oil filters, gaskets, pistons, ignition points, ignition coils and anti-friction bearings.
- ★ General Motors has cancelled orders for dies for 1948 models of Chevrolet, Pontiac and Oldsmobile because of unsettled conditions.



Service Volume Continues At Very High Level

A definite result of the present shortage of new cars which is being intensified and prolonged by the Lewis coal strike, is to keep service volume at extremely high levels. Car owners believing that the day for "their" new car is again postponed, or simply refusing to pay Cadillac prices for a Buick, or Buick prices for a Ford, are having their cars reconditioned. Not for many years have service stations been called on to perform so many major overhaul jobs. Fortunately there are more mechanics now available to do the work. However, the shortages in parts continue to plague service managers. Engine bearings, gaskets and starting batteries head the list of shortages and

unfortunately there is little likelihood of the situation improving while the coal strike continues.

Copper Price Rise Affects Auto Costs

Copper is another item that has risen sharply in price since decontrol. With the end of the Government's copper buying program, domestic buyers now are free to bid the world market price for the metal, plus an import duty of four cents a pound. The domestic price under OPA was 14.375 cents a lb., but had risen by Nov. 20 to 17.5 cents. If, as in the case of lead, the domestic price goes up to the world price plus the four-cent import duty, the price may rise to 21.5 cents a pound, an increase of 50 per cent over the former con-

trolled price. One automotive company estimated that the price of copper already has increased its costs by more than \$1.25 per car.

Industry Forced to Verge Of Shutdown by Strikers

What all the repercussions of the coal strike will be, is impossible to fathom. If any concessions are made, undoubtedly there will have been started a continuing wave of strikes which will persist as long as the Wagner Act stays on the statute books. One of the initial results was to close down most Detroit plants for the four-day Thanksgiving holiday. Another definite result was the announcement by Willys-Overland that production of their new Six would be postponed indefinitely, probably until the latter part of the coming year. The reason is the uncertainty over the continuing shortage of supply of materials and parts. Detroit officials were unanimous in stating that the lack of steel, resulting from the coal strike, would be the cause of shutdowns. Of equal importance in its depressive effect on car production, would be an embargo on freight shipments that would halt shipments of steel, other materials and parts to the automotive plants.

Most car factories are operating on a day-to-day basis and the situation will undoubtedly continue indefinitely. In discussing these strikes, the labor leaders are blamed but it must be remembered that the basic and underlying cause is the Wagner Act, which must be repealed.

New Passenger Car Registrations*

First Nine Months 1946 and 1941 Compared

| MAKE | September 1946 | August 1946 | September 1941 | Nine Months † | | Per Cent of Total † Nine Months | |
|-----------------|----------------|-------------|----------------|---------------|-----------|------------------------------------|--------|
| | | | | 1946 | 1941 | 1946 | 1941 |
| Ford..... | 32,272 | 37,058 | 20,073 | 202,146 | 520,995 | 19.32 | 16.28 |
| Chevrolet..... | 36,723 | 38,412 | 17,209 | 161,336 | 766,122 | 15.42 | 23.90 |
| Plymouth..... | 20,976 | 24,625 | 16,532 | 144,067 | 390,079 | 13.77 | 12.17 |
| Dodge..... | 11,774 | 16,048 | 8,617 | 92,117 | 182,682 | 8.80 | 5.70 |
| Buick..... | 15,361 | 14,012 | 4,770 | 58,735 | 265,205 | 5.61 | 8.27 |
| Pontiac..... | 11,580 | 11,475 | 5,216 | 54,868 | 244,765 | 5.24 | 7.64 |
| Nash..... | 6,021 | 7,575 | 1,882 | 54,653 | 87,155 | 5.22 | 2.10 |
| Hudson..... | 7,146 | 6,788 | 4,299 | 47,419 | 61,126 | 4.53 | 1.91 |
| Chrysler..... | 5,663 | 7,940 | 4,587 | 44,798 | 124,913 | 4.28 | 3.90 |
| Oldsmobile..... | 9,735 | 8,375 | 3,523 | 42,799 | 199,489 | 4.09 | 6.22 |
| DeSoto..... | 4,142 | 5,966 | 3,412 | 38,395 | 77,907 | 3.67 | 2.43 |
| Studebaker..... | 6,360 | 6,578 | 4,532 | 33,783 | 94,211 | 3.23 | 2.94 |
| Mercury..... | 5,823 | 6,816 | 2,032 | 33,164 | 69,190 | 3.17 | 2.16 |
| Packard..... | 3,532 | 3,771 | 3,736 | 20,280 | 53,050 | 1.94 | 1.66 |
| Cadillac..... | 2,350 | 2,154 | 824 | 11,272 | 50,297 | 1.08 | 1.57 |
| Lincoln..... | 991 | 1,524 | 478 | 5,673 | 15,322 | .54 | .48 |
| Crosley..... | 373 | 139 | 152 | 602 | 797 | .06 | .02 |
| Willys..... | 18 | | 1,087 | 18 | 18,964 | | .59 |
| Frazer..... | 4 | 1 | | 5 | | | |
| Kaiser..... | 3 | 2 | | 5 | | | |
| All Others..... | 39 | 57 | 276 | 337 | 2,423 | .03 | .08 |
| Total..... | 180,896 | 199,316 | 103,239 | 1,046,472 | 3,204,692 | 100.00 | 100.00 |

*—Data from R. L. Polk & Co.

†—Does not include returns from California, Kentucky and New York for the month of September 1946 and 1941.

SLANTS ON

THE



Passenger Car Tire Production Makes Record

While passenger car tire production reached an all-time high of 16,651,169 units during the third quarter, production of truck and bus tires totaled 3,683,386 units, a reduction of about 10 per cent from the levels of the first and second quarters. However, CPA says that this lower production was all that was needed to satisfy both the war-time backlog and current demand in many truck and bus sizes, particularly in the large and medium-size groups. As is well known, the tire industry has been concentrating on the production of passenger car tires and small truck tires, demand for which still substantially exceeds supply.

In any case, the 1946 truck and bus tire production goal of 13,860,000 units will probably be exceeded by about 10 per cent, as evidenced by the production of 11,472,327 truck and bus tires through Sept. 30. Production of passenger car tires for the year is still expected to be about 3,000,000 of the goal of 69,150,000 units.

1947 Models Will Show Little Change from '46

Indications are pretty clear that most 1947 models will be the same as 1946 except for changes in the grilles—just enough change to differentiate one model from another. Several reasons are offered for this move. One is the effect of strikes and shortages on major changes that had been projected; the other, and more important, is the need for more production of any design now tooled up.

The tip-off that changes will be minor will be found in the relatively short time to be taken for change-over to 1947 production. We have this dope on pretty good authority. In fact, several days ago I had a social visit with the chassis engineer of one of the GM divisions who confirmed this so far as his division is concerned.

Automotive Repair Costs Remain Reasonable

While car prices, particularly the "used" 1946 models, continue to soar, the cost of maintenance has not had a corresponding increase. True, in metropolitan areas, the cost of repairs has increased somewhat since OPA was interred, but the increases have not been spectacular. For the most part the higher charges to the customer have been mostly in the increased list price of repair parts, there being little change in labor charges.

Over-Priced Cars Reflect Old Black Market Prices

In Philadelphia and many other metropolitan areas many so-called used 1946 models are being advertised at virtually 100 per cent over the legitimate ceiling price. New car dealers testify that the cars are being purchased by the used car dealers from new owners. Used car men aver that in most cases their supply is obtained direct from the dealer—all that is necessary is to offer an "auto" of sufficient size. Actually the prices are the former black market prices which, with the demise of OPA are now out in the

open. The situation is, of course, lamentable but it will continue to exist only as long as there are purchasers whose needs or desires are such that they are willing to pay such extravagant premiums.

Weekly Production Of Cars and Trucks In U. S. and Canada*

| Week Ending | | 1946 | Corresponding Week in 1941 |
|-------------|---------|--------|----------------------------|
| Jan. | 5..... | 13,920 | 76,690 |
| | 12..... | 23,340 | 115,935 |
| | 19..... | 28,465 | 124,025 |
| | 26..... | 29,410 | 121,948 |
| Feb. | 2..... | 29,295 | 124,400 |
| | 9..... | 23,785 | 127,675 |
| | 16..... | 21,555 | 127,510 |
| | 23..... | 19,410 | 127,740 |
| Mar. | 2..... | 17,575 | 126,550 |
| | 9..... | 23,050 | 125,915 |
| | 16..... | 35,020 | 131,410 |
| | 23..... | 37,285 | 123,805 |
| Apr. | 30..... | 43,070 | 124,165 |
| | 6..... | 47,735 | 116,255 |
| | 13..... | 49,425 | 99,260 |
| | 20..... | 57,565 | 99,945 |
| May | 27..... | 64,620 | 108,165 |
| | 4..... | 67,060 | 130,610 |
| | 11..... | 71,335 | 132,380 |
| | 18..... | 48,565 | 127,255 |
| June | 25..... | 53,020 | 133,560 |
| | 1..... | 31,895 | 106,395 |
| | 8..... | 43,175 | 133,645 |
| | 15..... | 50,206 | 134,682 |
| July | 22..... | 53,930 | 133,565 |
| | 29..... | 64,015 | 127,926 |
| | 6..... | 46,810 | 96,467 |
| | 13..... | 74,015 | 114,318 |
| Aug. | 20..... | 80,395 | 109,912 |
| | 27..... | 84,720 | 105,635 |
| | 3..... | 78,190 | 62,146 |
| | 10..... | 77,825 | 41,795 |
| Sept. | 17..... | 88,990 | 45,560 |
| | 24..... | 91,360 | 45,525 |
| | 31..... | 74,960 | 39,965 |
| | 7..... | 72,535 | 32,940 |
| Oct. | 14..... | 88,888 | 53,165 |
| | 21..... | 80,972 | 60,615 |
| | 28..... | 85,572 | 77,035 |
| | 5..... | 91,925 | 76,820 |
| Nov. | 12..... | 86,330 | 79,065 |
| | 19..... | 89,540 | 85,600 |
| | 26..... | 87,680 | 91,855 |
| | 3..... | 95,752 | 92,879 |
| Dec. | 9..... | 92,760 | 93,585 |
| | 16..... | 94,425 | 92,990 |
| | 23..... | 94,973 | 76,820 |

Total.....2,711,533 4,736,328
*Compiled by Ward's Automotive Reports.



Down on Used Car Row new car prices are unbelievably high, but the time has not come when the industry needs a political thumb to hold them back

Sky Rocket . . .

Black Market Prices

EVERYONE expected some rise in prices when the ceilings were removed. But the sudden doubling of used car prices on some lots exceed the gloomiest predictions of any but the most theoretical of Washington politicians.

In Philadelphia, a city which serves as example because a nation-wide trend is there exaggerated into a dramatic picture of conditions, present prices on some used car lots do make the old ceiling price look like Hitler's contribution to Jewish Relief.

Listed on one lot was a brand new \$1,900 model, at \$3,300. Another lot had a model fresh from the assembly line—at exactly twice the legitimate price. On yet another lot were two convertible coupes, both new and unused, both considerably above your selling price. Up and down Automobile Row you could find no-mileage \$1,600 cars at \$2,900 and at \$2,700, and all sorts of other fantastic price tags. One estimate of a week ago was that approximately 1000 cars were being offered at anywhere from \$1,000 to \$1,500 above the

factory quoted prices.

But before we start shouting, "Down with the dirty capitalistic system," let us look at the situation more closely.

When the late and unlamented OPA was in its prime, no group of men declared more loudly than we in the automobile industry that for the good of the country, government intervention must disappear. When OPA finally did breathe its croupy last, no group of men cheered more loudly because free enterprise once more could lead the way along the road to prosperity. And the thinkers in our industry, not being Pollyannas, realized and declared that the transition back into the green pastures would bring forth some ugly little prob-

lems which we would have to cope with. We knew that for a time prices would get out of hand and that some men would take advantage of the changeover to wring the neck of their golden goose just to get a few of the eggs at once.

This problem was willed to us. It is part of the bequest of OPA. Then it was called the "Black Market," and OPA was signally unable to control it. The two-price system became strongly entrenched. The present apparent leap in automobile prices is actually no change at all. Reputable dealers still adhere very closely to what were the old ceiling prices, to aid our economy in adjusting itself. The Black Market dealers, however, and some few who were held from its ranks only by fear of government prosecution, immediately came out in the open. There has been little real change even in Black Market prices.

The important problem to us in the industry is not the dramatic one that a gyp dealer has nicked some

(Continued on page 68)

Auto Dealer Sells Planes

DOES the automobile dealer have a place in the merchandising of the private airplane?

With 144,000 private and 145,000 student licenses active in the United States as of July 1, and about 65,000 to 70,000 personal planes available at the present time, there undoubtedly is going to be a good market for private aircraft in the years ahead. The private plane industry will build between 35,000 and 40,000 planes this year and hopes to turn out another 60,000 next year to take care of the demand. With the increasing number of airports and flying facilities being matched by a growing interest in flying, it appears that a sizeable sales field for private planes is developing. The planes are going to be sold by some one, and a few automobile dealers already have decided they can well handle the business as a profitable adjunct to their regular line of automobiles.

In Lakewood, Ohio, suburb of Cleveland, R. C. Browne, an established DeSoto-Plymouth dealer, has taken on the dealership for the Aeronca line of light personal planes. Two models are offered at present—the Champion, a two-place, tandem-type, which retails at \$2475, and the Chief, a side-by-side two seater selling at \$2645. Both are 65 horsepower. Aeronca

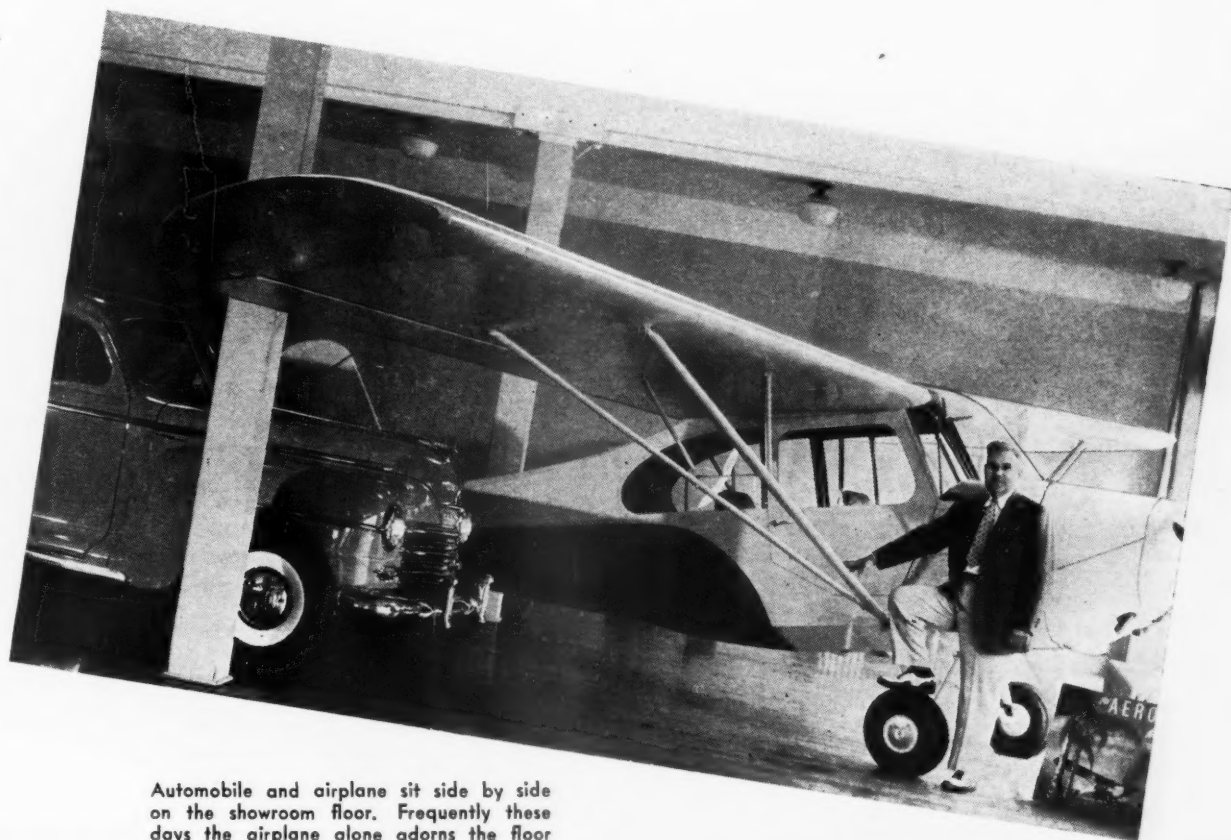
Can you, like this Cleveland dealer, sell

private planes in addition to your cars?

by LEONARD WESTRATE

is planning to add a third model soon, the Chum, a two-control, spinproof, low wing type, with all-metal fuselage and 75 hp engine. The price has not been determined, but is expected to be considerably above that of the Chief. Browne also is franchised to sell the Bellanca line, which is a much more expensive plane retailing above \$6000.

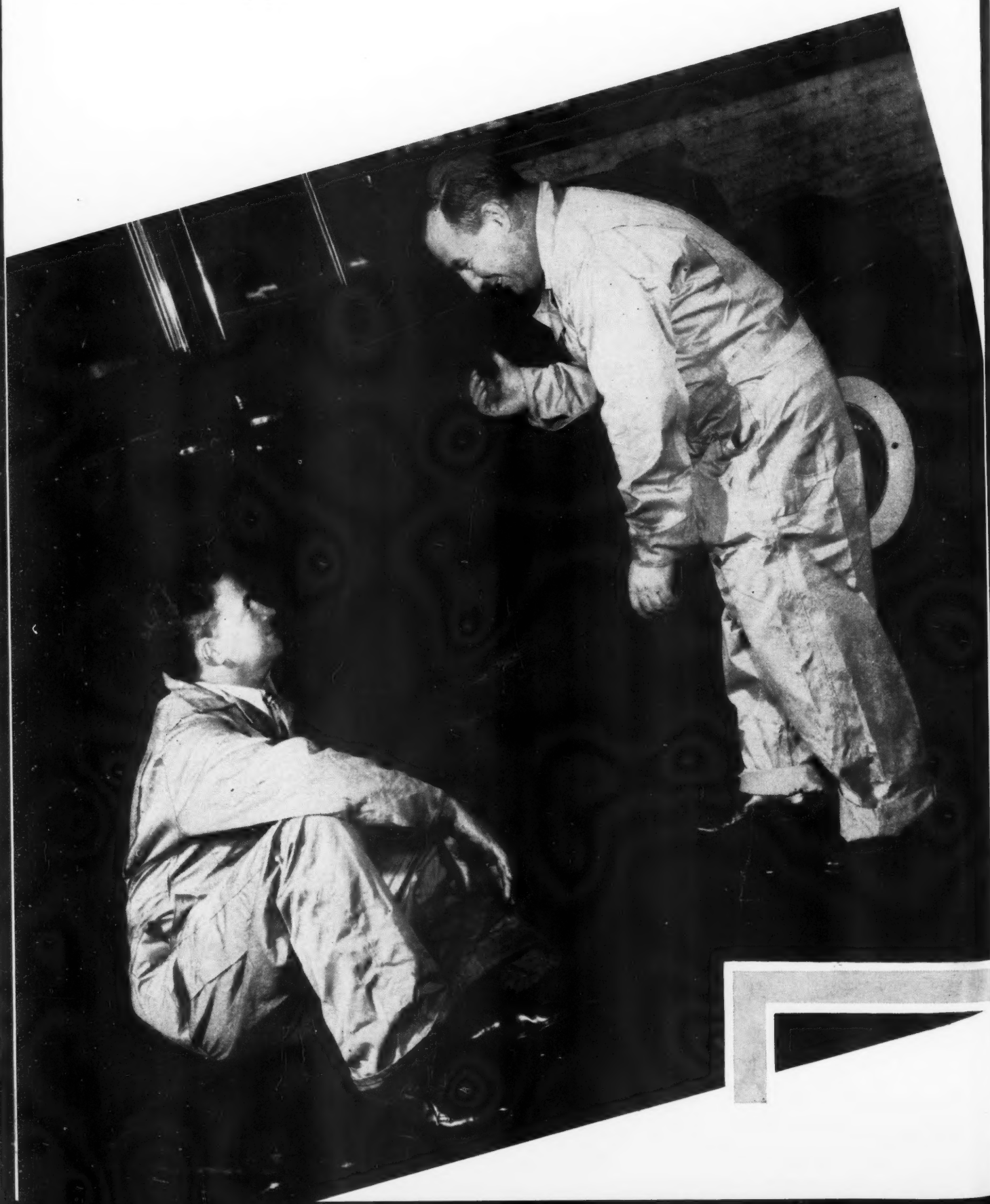
Browne keeps a floor model on display in his auto-
(Continued on page 74)



Automobile and airplane sit side by side on the showroom floor. Frequently these days the airplane alone adorns the floor

**Pop turns up an answer to car vibration as
he shows one of the most prevalent causes of
rough riding in these days of tire shortages
and untested recap jobs**

Pop Tames



a Rough Rider



by J. EDWARD FORD



MOTOR AGE

BASIC COURSE FOR

MECHANICAL TRAINING

IT WAS five minutes to eight when Caleb Spender, the sharp-featured cashier at the Glenrock National Bank, stepped briskly into the shop office. Pop O'Neill was getting into his coveralls.

"What's wrong this morning?" demanded Spender with an accusing look in his narrow eyes. "The shop door is still locked."

"We're not open yet," said Pop.

"That's ridiculous. You're here, aren't you?"

Pop buttoned the coveralls and pulled down the crotch. "You're at the bank before nine every morning, ain't you?"

"What's that got to do with it?" asked Spender.

"You don't wait on no customers till you open the front door."

Spender stamped a patent-leather clad foot in annoyance. "You exasperate me, O'Neill," he said. "I'd never darken your door if there were another good repair shop in town."

Pop's face relaxed in a wide grin. "Why Cal," he said, "I didn't know you felt that way about us."

"You charge plenty for everything you do," snapped Spender. "Now what are you going to do about my car?"

"I don't know. What seems to be wrong with it?"

"Something pretty serious. It feels as if I'm always driving on a corduroy road."

"Hmm," said Pop. "Could be square wheels."

"Stop trying to be funny. I don't feel safe in that car any more. I want it fixed."

"Sure the roughness ain't in the springs or shocks?"

"I don't know where it is," said Spender. "But there's one thing certain. That's the worst vibration I ever felt in my life. And when I get over fifty, it starts to shimmy."

Pop pulled at his right ear. "That don't sound too bad," he said. "We'll have your car ready at five."

"I'm going home early today. I want the car by four."

"The way we're jammed with work," said Pop, "you're lucky to get it any time today."

Spender's colorless lips tightened in a thin line. "Some day, O'Neill," he said, "you'll be coming to the bank for a loan. And when that day comes—"

"Yes, yes," said Pop, with a flourish of his hand, "you'll say 'No'—the same as you done the last time."

Spender glared, wheeled around, and strode out. Pop chuckled and went to the shop door.

"Hey Tommy!" he called.

Larry answered. "He ain't in yet."

"Well tell him to look after Cal Spender's jalopy," said Pop. "Cal left it at the curb. Says it's got some kind of vibration and a high-speed shimmy."

"Okay," said Larry.

When Tommy appeared a few minutes later, Larry called him over. "Go out and wheel in Caleb Spender's cement mixer," he said. "He parked it at the curb."

"What's wrong with it?" asked Tommy.

"Vibrates or somethin'."

"Engine, front end, or what?"

"How do I know? I ain't even looked at it."

After driving Spender's car into an empty bay, Tommy cut the switch and got out. He was annoyed with Larry. The latter might at least have given him a hint as to where he might find the trouble. But there was nothing to do now except follow his own hunches.

A common source of excessive vibration, Tommy knew, was a rough-running engine. The carburetor might be out of adjustment or dirty. Or it might be a plain miss. It was even possible that an engine

(Continued on page 126)

"Sure," said Larry, "and it might be Mexican jumpin' beans in the fuel line. But we ain't got time to check everything."

HIS flair for showmanship led Milton Kaufman to install a turntable display in the corner of his mirror and glass "car palace" at One Remson Avenue, the heart of downtown Brooklyn. But Mr. Kaufman is not interested so much in the esthetics of motion as he is in the value of eye-catching in selling cars. He believed that motion added to his car display would attract more potential customers. It did.

Kaufman estimates that over a period of time about 90 per cent more of the traffic by his store between 8 in the morning and midnight stopped to watch the car spinning in his display. He has figured out that the cost of turning the car is about one cent per thousand spectators. He is more than satisfied that a touch of Broadway is not out of place in the field of selling automobiles.

The turntable is spot-lighted from



Showing a convertible on the turntable which makes the motion display. In use the turntable is scarcely visible, lifting cars only slightly from the floor.

MOTION Stops the Public

concealed lamps in the dome-shaped, sky blue ceiling over the corner show-space. Around this light-weight adjustable display device Kaufman has built his statistical picture to prove to himself the value of showmanship to any car dealer.

The first day of clocking traffic, *before* the turntable was installed, 15 per cent stopped and looked at the display.

One week later, with the well-lighted model making one revolution every 2 min. on the turntable, 21 per cent of the total traffic stopped to see the display, attracted by motion and light.

A downtown Brooklyn automobile dealer

made a study to determine what effect the

addition of motion would have on his window

In order to confirm the increased percentage and avoid the fallacy of novelty-increase, a third clocking was made one week later. The day was chilly but 36.2 per cent stopped before the display.

Kaufman has held his franchise since 1939, formerly operating a sales outlet at Church Avenue in Brooklyn. By 1941 he was selling 700 cars yearly. In 1945,

(Continued on page 132)

A long wait and a lull in traffic finally gave a "still" of the company. Mr. Kaufman, who proved the success of turntable advertising



MANY car owners are still under the impression that the only use for chains is in getting out of deep snow. Recent tests indicate however, that equal importance is the reduction of skids and the increased stopping power to be had from modern chains.

Old fashioned chains, with cross links widely spaced, were of little or no help in checking skids or stopping on ice. Chain development, however, has not stood still, and modern chains are so designed that a portion of the cross links are in contact with the road at all times, thereby "gearing" the tire to the ground with resultant improvement in traction. This is especially true of the "premium" type chain. The emergency buckle-on type of chain continues to be useful in pulling out of deep spots and drifts, but it is not particularly useful in controlling skids or in permitting quick stops.

There is a good chance that the average customer does not know the full story of modern chains and what they can mean to him in increased safety and savings in time and money. Certainly the report of one survey group that accident death ratios in snow area states run 24 to 53 per cent higher in winter than in summer would indicate that not enough attention has been paid to the potential dangers of winter driving.

The safety factor, of course, should be of prime importance to the driver.

If he has been thinking of chains as merely a device to pull him out of drifts and uncleared roads he has been missing out on the most important developments in chain progress. If, however, he realizes that the trend of chain improvement has been toward providing dry pavement traction on snow or ice, he may come to think of chains not merely as occasionally handy accessories, but as important equipment for winter driving.

One test group, locking the brakes at 20 mph, obtained the following stopping distances:

Sell Chains For Safety

The latest report on the newest types of chains for safe and sane winter driving



by **RICHARD L. REDDY**

| | |
|----------------------------------|---------|
| Synthetic tires on ice..... | 193 ft. |
| Standard chains on rear..... | 66 ft. |
| Standards, front and rear..... | 50 ft. |
| Premium chains, rear only..... | 46 ft. |
| Premiums, front and rear..... | 31 ft. |
| Synthetic tires on dry road..... | 22 ft. |

The difference of only nine feet between dry concrete stopping and stopping on ice with premium chains on both front and rear wheels is a good gage of chain progress. In other words, improved design and materials are closing the gap between summer

(Continued on page 80)



The Fisher Craftsman's

The annual competition for teen age Americans provides ample proof that the auto-

THOUSANDS of American boys are designing and building model automobiles in a competition of the Fisher Body Craftsman's Guild, which hopes to encourage the development of craftsmanship and fine handiwork among the nation's teen-age youth.

The annual competition offers \$85,000 in cash awards and university scholarships to the contest winners. There are no entry fees. Any boy from 12 to 20 years old is eligible and may build either a model Napoleon coach or a model automobile, as he chooses.

These photographs, taken during the 1946 competition, are a fair indication of what is being produced in many a basement workshop today, and what is presented to the lucky boys who go to the annual Guild

Convention at the General Motors plant in Detroit.

Fig. 1 shows the winners in the various classes—senior and junior, coach and car—with their prize-winning models. Fig. 2 shows Vincent J. Rauth, a farm boy from York, Neb., winner in the senior division with a two tone rear-engine model with radiator intakes on the leading edges of the rear fenders. His prize was a \$4,000 university scholarship. Fig. 3. Walter Roth of Detroit won a scholarship with high honors in the Napoleon coach competition. Fig. 4. The model car winners were invited to inspect some of the quarter size models the GM styling section makes before going into full scale production. Fig. 5. C. E. Wilson, chief executive officer of GM, declares



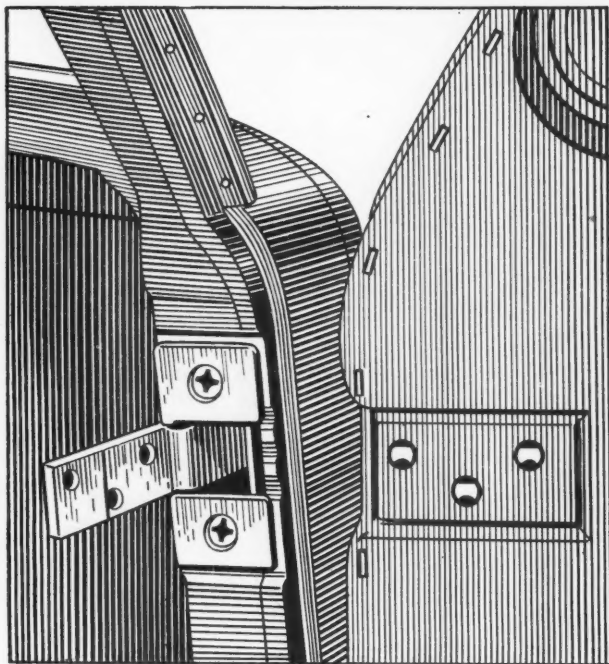
Guild

motive industry will pass on to able hands

Robert J. Hartlieb of Allentown, Pa., and Virgil Max Exner of South Bend, Ind., co-winners of \$4000 scholarships in the junior division.

Figs. 6 and 7. Virgil Exner, 13, laid out his original design on the drawing-board. Certain practical limitations, such as headroom and overhang dimensions, are imposed by GM rules to avoid "Buck Rogers Specials." Exner then built his car in modeling clay to enable him to study the over-all effect and to make changes before he cast his model. Exner made several trial models before he was satisfied with his plaster of paris entry model. Most boys, however, made their models of wood. The insert above shows Exner's finished product—truly fine work for any man to display.





Aligning Door on GM Cars

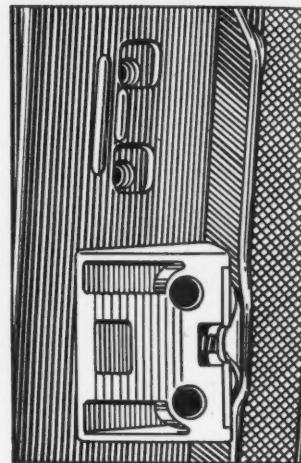
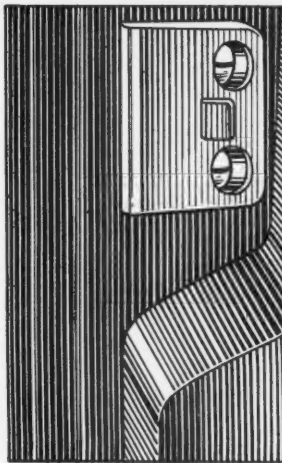
**Body rattles caused by poorly aligned
doors can be eliminated with few tools**

CAR owners invariably judge the excellence of a repair job by the quietness or lack of it of the car after it is returned to them. Too often a repair shop does a good job on an engine, or some other unit, only to have its work unfairly condemned by the owner because of "noise." Actually the noise is often caused by a body rattle.

One of the frequent causes of these rattles is a poorly aligned door. Fortunately, the alignment of doors can be easily corrected and with a minimum of tools.

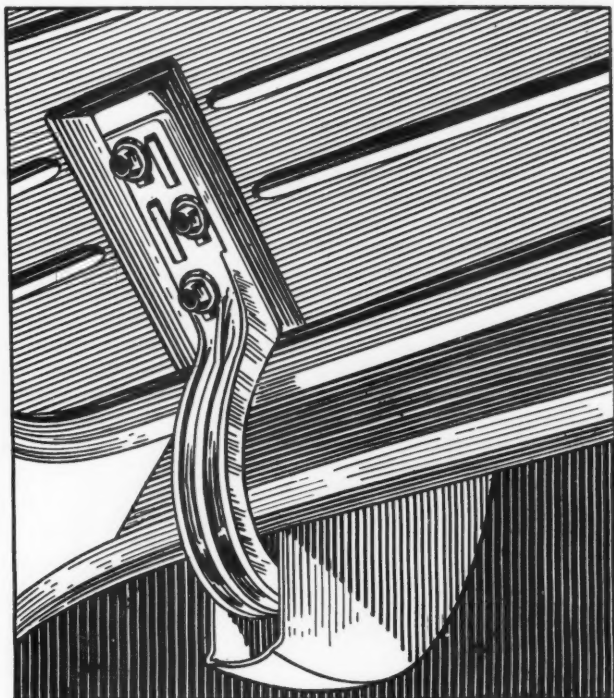
A wide range of adjustment is possible on General Motors cars without any special equipment being necessary. This has been made possible by the method of hinge attachment, which consists of a tapped, floating backing plate which, when the hinge bolts are slacked off, may be moved freely in any direction.

The hinges on all recent General Motors doors are concealed. The front door hinge design differs from



Above. The adjustable door lock striker plate. View to the left is with it in position, to the right, with it detached

Left. An illustration of the front door hinge pillar, showing in detail the movable anchor plate



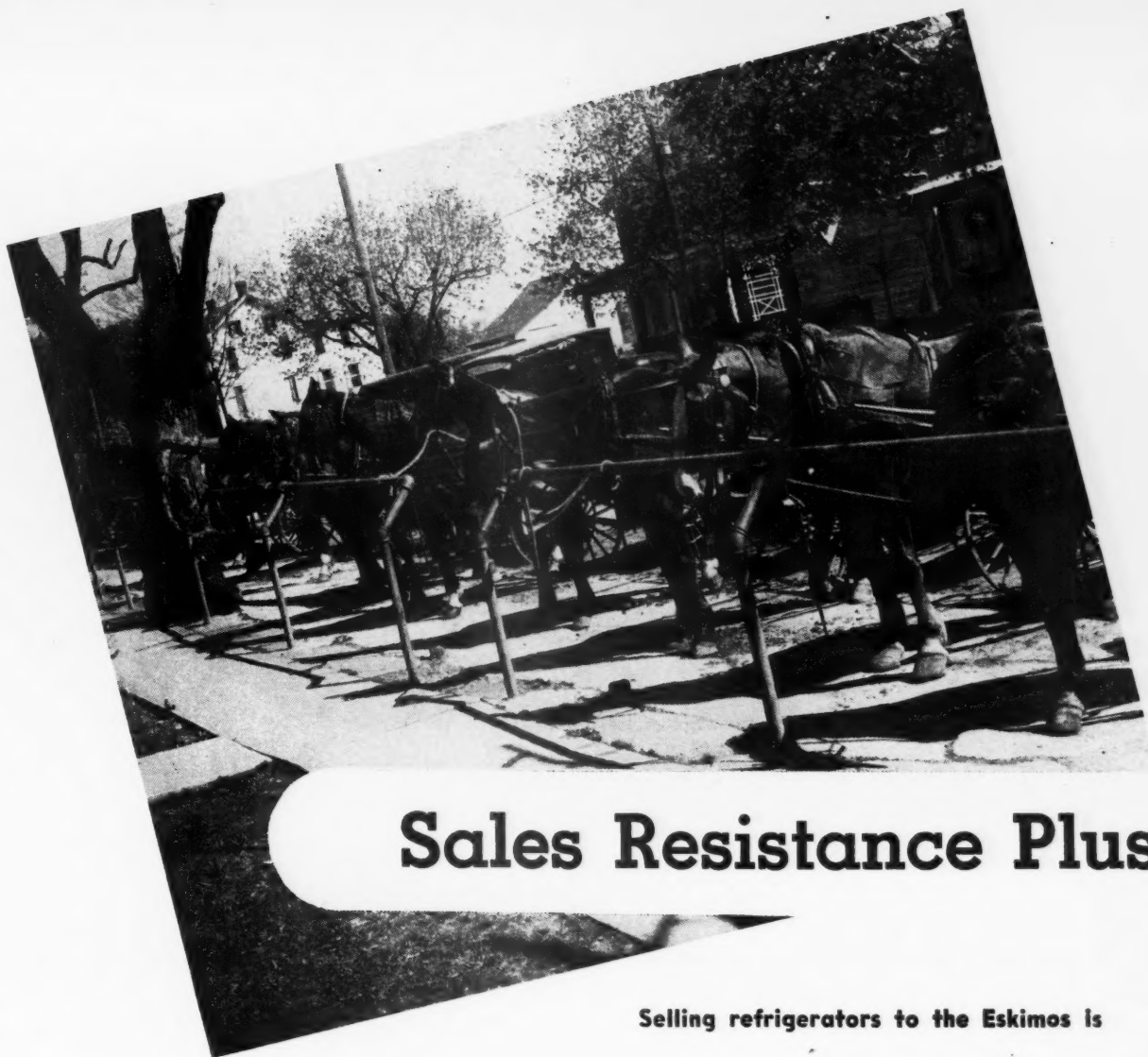
An illustration of the hinge detail of the rear luggage compartment lid, showing the slotted holes which permit movement

that of the rear and each half of the front door hinge is attached to the face of each hinge pillar. Provision is made for alignment at the hinges, striker plate and dovetail.

If you need to move the front door closer to or farther away from the body panels at the hinge pillar:

1. Remove the stamped metal weatherstrip sealing plate covering the inner edge of each hinge on the body hinge pillar.
2. Loosen the three hinge screws on the body hinge pillar.

(Continued on page 100)



Sales Resistance Plus

Selling refrigerators to the Eskimos is

no harder than selling cars to the Amish

by HAROLD SEVERSON

OTHER than falling off a log, there's nothing much easier than selling automobiles these days. Long lists of people impatient to get their hands on new cars may have temporarily lulled automobile dealers and salesmen into thinking that such a curiosity as sales resistance in the new car field just doesn't exist these days.

Strangely enough, it does. In such widely separated areas as southern Pennsylvania and southwestern Louisiana, horses and buggies are still first choice with thousands of farm people. Tourists driving through the Shenandoah Valley of Virginia often pull to a screeching stop, eyes popping in surprise as they see black-hooded buggies rolling placidly along smooth highways pulled by one-horsepower—in the flesh.

When a Cajun driver not far from New Orleans says, "Fill 'er up," he's probably asking for oats, not gasoline. The chances are about 100 to one that he's driving an 1890 model buggy, not an automobile.

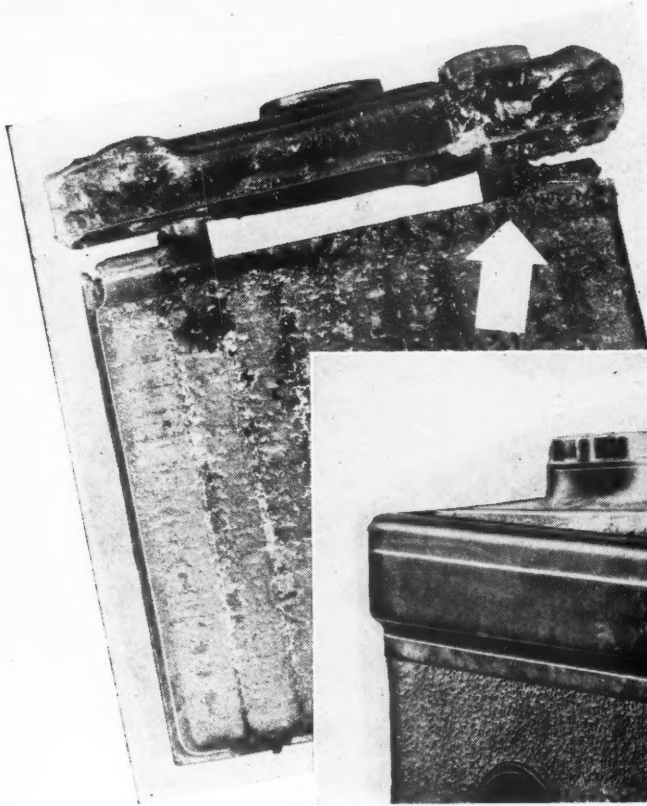
For this is the famed Evangeline country, the land made famous by Longfellow's haunting poem. Here's where you'll find peace, courtesy, good food, the strongest and blackest coffee this side of Syria, and thous-

ands of buggies rolling briskly behind genuine horsepower. Cars? Yes. But plenty of buggies, too.

Populated almost exclusively by French-speaking descendants of people exiled from Nova Scotia in 1755 by the British, this section still clings tenaciously to the customs and traditions transplanted along with the people. It seems more like a portion of rural France than a part of modern America. French is still the favorite language of a majority of the citizens. The names on drug store windows and clothing store signs are of Gallic origin, not Anglo-Saxon. Little children call to one another in soft French phrases. Oldsters converse over cups of coffee in the language their forefathers spoke 200 years ago.

Life moves at a slow, unhurried tempo in the Cajun country. People have time to spend a leisurely half hour or more sipping black coffee served in tiny cups in small town cafes. Along the country lanes in Evangeline, St. Landry or Lafayette parishes (that's

(Continued on page 84)

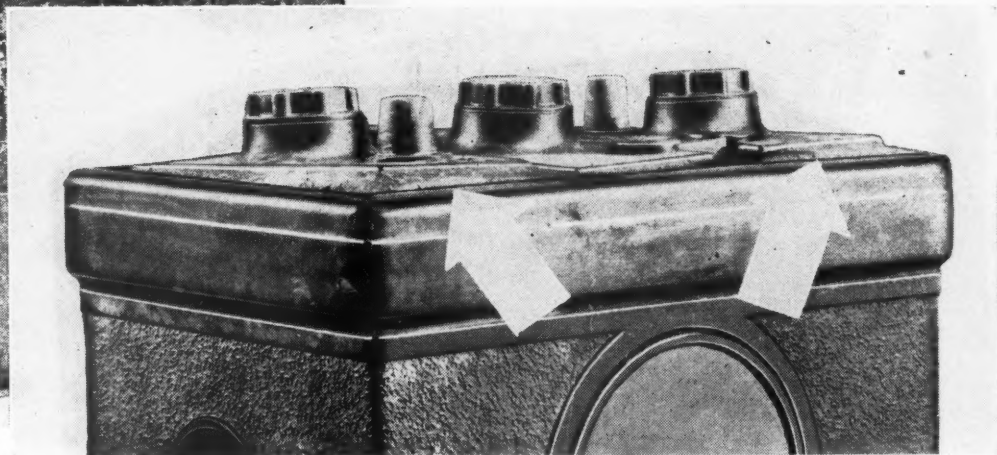


Left. Sluffed-off positive plate material has built up on negative plate until the plate is shorted to the positive plate strap

Below. An over-charged battery. The cell covers at the positive ends have been raised by swelling and buckling of the positive plates

Right. A positive plate swelled by overcharging until it has shorted against the negative plate strap

Right below. A battery element which has failed due to cycling. Material washed out of the plates has bridged the separators between plates



How to Recharge Batteries

WHEN the battery gravity gets down to 1.215, it is time to recharge the battery. It is also a good idea to analyze the operating conditions of the car and perhaps to make a quick check or two of the generator-regulator system in order to find out what has caused the battery to run down. For instance, driving at low speed with lights, heater and radio on will take more out of the battery than the generator can restore and a discharged battery will naturally result. On the other hand, a regulator or generator that is not functioning correctly will prevent full generator output so that again the battery will not have a chance. We will cover in a subsequent article the procedure for checking the generator-regulator system to determine whether it is at fault when the battery runs down.

There are two methods of recharging batteries which differ in the amount of charging current put into the battery. One method utilizes a low charging current for a considerable period while the other utilizes a high charging current for a short time. The two methods might be called the slow-charge and the quick-charge methods: With either charging method there are certain cautions to be observed:

Excessive overcharging must be avoided.

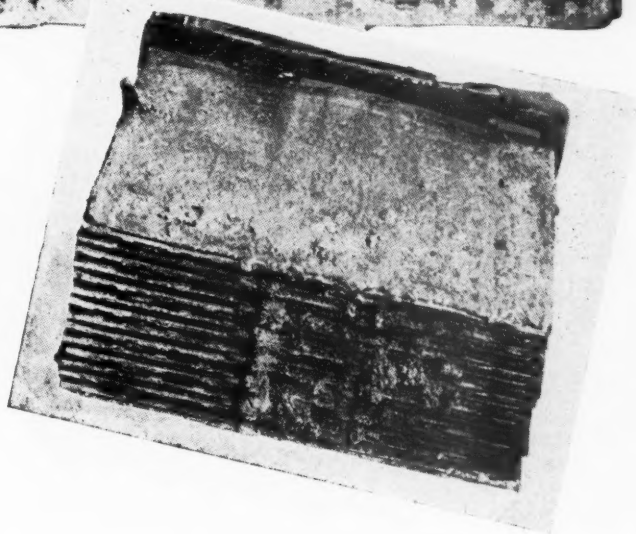
In his final article on batteries the author discusses in detail the recharging of batteries as well as the common types of battery failure

The charging rate must be reduced or charging terminated if excessive temperatures are reached.

There must be sufficient electrolyte in all cells so plates and separators are covered. Water should be added, if necessary, to bring electrolyte level up three-eighths of an inch above the tops of the plates. Avoid overfilling.

Cell voltages (under charge) and specific gravity readings must not vary greatly from cell to cell.

Checking must continue during the charging process



In slow-charging the current input to the battery is adjusted to one ampere per positive plate per cell. A 15-plate battery would thus be charged at a 7-ampere rate. When several batteries of different sizes are charged in series, the rate should be adjusted to the battery with the least number of plates. Charging should be continued until all cells are gassing freely and the gravity has not shown a rise for three successive readings taken at regular intervals. This indicates that substantially all the lead sulphate in the battery cells has been reconverted into active



by W. H. CROUSE

material so that the battery is fully charged.

Check electrolyte temperatures periodically. If the temperature of any cell exceeds 110° F. reduce charging rate or end the charging process. Excessive temperature will damage the battery.

If, at the end of the charging process, with all cells gassing freely, it is found that one cell is considerably lower than the others, it may be that that cell has lost acid (by spilling or spraying out). Or perhaps one cell has too high a gravity reading, which may have resulted from someone's having added water. In either case, the gravity should be adjusted so that it is in line with the gravities of the other cells. If it is too high, remove some of the electrolyte and add water. If it is too low, remove some of the electrolyte and add 14.00 electrolyte. Continue the charging to insure mixing and make additional adjustments as necessary until the gravity is corrected. Never adjust gravity in a cell that does not gas freely since such a cell is probably internally

shorted or otherwise defective.

Quick-chargers are capable of putting into the battery as much as 100 amperes and, for this reason, they must be used with a certain amount of caution. The quick-charging process cannot fully charge a battery although it can substantially recharge or "boost" it. After quick-charging, the battery can be brought up to fully charged condition by a comparatively short period of slow charging.

Before a battery is quick-charged, it should be
(Continued on page 88)



The De SOTO SUBURBAN

DESOTO Division of Chrysler Corporation has announced details of its new suburban model, newest addition to the DeSoto Custom line. The car is a decided innovation in that it combines the functional utility of the station wagon with conventional appearance of closed car body styling. Built on a 139½-in. wheelbase, it can seat as many as nine persons comfortably and still have plenty of space for luggage. Price was not available at time of going to press.

Interior seating can be modified to proportion luggage and passenger space according to any particular situation. All three seats are adjustable forward and back, with the center seat having a particularly wide range of adjustment. The rear seat may be folded down to become part of the floor and the other two seats moved forward to provide more than 6 ft. of luggage space and at the same time seat six persons. Split-back seats fold forward to facilitate entrance to the center and back seats. The right and left-hand rear doors are wide enough to accommodate a normal size steamer trunk, and the rear trunk door provides additional loading space. By moving the seats as far forward as possible the 6 ft. of

space that is provided in the interior can be used as space for sleeping when the car is used for cross country trips or camping. In addition, baggage carrying capacity is augmented by a large luggage rack atop the car, surrounded by a chrome guard rail. The floor of the rack is of polished hardwood strips and the complete assembly is easily removed to enable washing the car top.

Interior appointments are in keeping with the outward luxury appearance of the Suburban. Seats are upholstered in a new plastic material—called Delon—available in antique tan, ivory and maroon. The material is durable, waterproof and easily cleaned with a wet cloth. Seats have an undercushion of foam rubber. Plastic paneling in

(Continued on page 132)



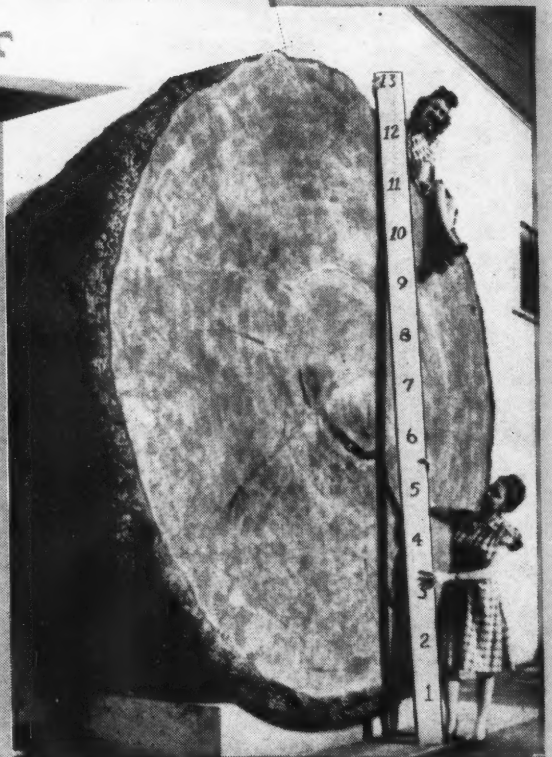
"Okay! So you want to get back to your game of checkers."



Lovely Louise Hyde, the girl with the long black hair, has posed for pin-ups in many settings, but none could be more effective than this frame of festive holly

MOTOR AGE
PICTURE
GALLERY

Extra stream-lining for "Miss Last Frontier" is provided by Ronda Fleming. The speedboat, piloted by Joe Guess of California, can better 80 mph



Described by a State of Washington logging company as the largest fir tree ever felled, this 586 year old tree measured 13 feet where it was cut through, above the base

Oliver Cormier of Dorchester, Mass., gets a boat ride which he has anticipated for 15 years. His sons designed and built the boat to help him realize his dream



With a jeep for a towing-agent, the new G-E Gyro-Glider takes to the air. It works like an autogyro without power and is capable of lifting 300 pounds in addition to its own weight and can land in extremely small areas

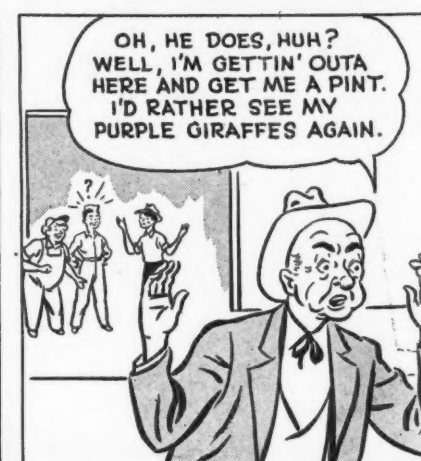
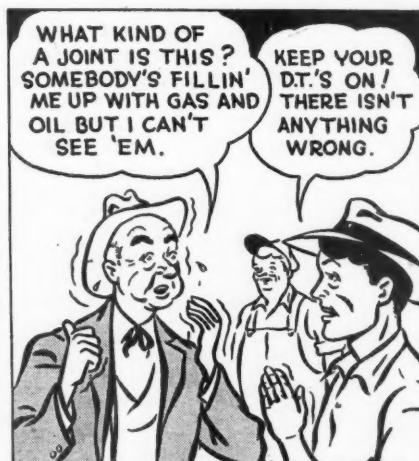
During the three day meet of the new England Live Steamers, E. W. Leaves tunes up his scale model of a "4-4-2 locomotive" of England's Great Northern Railroad. The engine is on a siding of a 2000 foot track in Danvers, Mass.



It's a far cry from "Get a horse!" A couple of horseless carriages, 175 hp variety, are giving a little help to the "President Cleveland," mighty wood-burning locomotive on its way to Lasky Mesa for use in "Duel In The Sun"



This is what happens when a test driver gets a blow-out. Three dynamite caps are inserted in the tire and exploded electrically when the driver throws the control switch at 45 mph



Sing it sweetly and everyone will

listen, but make it sour and the

whole world will turn a deaf ear

by ED HEVNER

SELLING POWER



Don't be a Hog Caller

MOST of us would be astounded if we heard ourselves as others hear us. For, despite our liking for hearing our own voice, we don't really hear it. We hear only our own conception of it.

If you really want to hear how you talk, you can. Some radio stations and department stores will record your voice for a fee. It would be the best investment most of us could make, provided that, after the shock, we would do something about it.

It would be an investment that would pay off in more sales, more friendships, and more out of life in general.

Maybe you are a between-the-teeth talker, mounting and mumbling your words so they can hardly be heard. People get tired of trying to hear your double-talk, so they just don't listen.

Possibly you are a corner-of-the-mouth speaker. Not only do you look funny, but you sound funny, and unless the other fellow is in your down-draft, he catches only snatches of the verbal flow.

Some people are confidential talkers, sinking their voices to a whisper, while others are loud-voiced to the point of absurdity. Each type is as obnoxious as the other. Whispers are ludicrous, and boomings are boring.

There's the type that stands too far away and expects us to be lip readers, but they are not so bad as those who move in uncomfortably close, pound on our chests with an index finger and spray us when we are in their line of flight.

You and I know all the types that distort talking into a travesty of what it should be, from the cigar-smoking butt gripper to the speed boy whose words pour out in a torrential outburst. Poison on all of them. They make business and life unnecessarily tough. But what about us? In what group do we belong?

If you don't want to listen to a record of your voice, ask your wife, who has to listen to your voice constantly, or ask a friend who will tell you honestly. Find out if you speak clearly or indistinctly, if you talk too slowly or too rapidly, if you whisper or shout, and if you have any physical mannerisms of conversation that annoy, and then go to work on yourself, and change.

Above all, find out if you are over-profane. That is

a failing, by and large, of automotive service men. What there is about the work that develops the excessive use of profanity I don't know, except possibly the all-masculine atmosphere of a repairshop.

If you are a heavy cusser, why? Do you swear from force of habit, from association with other swearers, or from the mistaken idea that profanity adds emphasis to what you say? It doesn't. It detracts. Profanity has been described as a substitute for thinking or for a weak vocabulary.

Sales power is exerted through the magic of the human voice, so if you want to sell successfully, check up on your voice.

Your voice should really represent you. It should be your best ambassador to sales and to friendship. It should not be a handicap that your otherwise good self must hurdle every time you open your mouth.

Talk easily, naturally, smoothly. Open your mouth. Don't whisper. Don't shout. Cut out the gestures that become meaningless with repetition. Watch yourself for physical oddities that distract attention from your conversation. Above all, eliminate constant profanity. It offends customers. It loses you their confidence.

Your voice and your speaking actions are revealing. But remember the old adage: "What you are speaks louder than what you have to say."

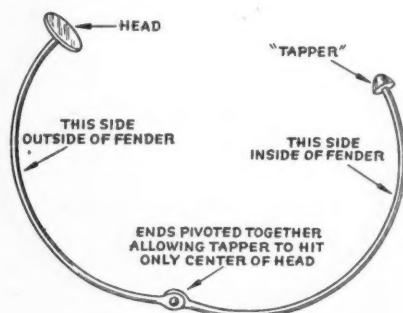
Here's your chance to pick up a little extra money. We'll pay five bucks (\$5.00) for every Shop Kink accepted and printed. So send 'em in to us—some short cut you use in doing a job easier and faster than the other fellow—some special tool you made when you couldn't buy one to do the job—and we'll do the rest. Incidentally we won't accept any that have previously appeared in any other automotive publication. Send 'em in!

SHOP

Tapping Out Low Spots On Damaged Fenders

Here's a gadget that might be handy for a body and fender repairman. It is a device for tapping out low spots on damaged fenders.

I made it of an old brake rod. I cut it in two, bent each piece in a semi-circle, hinged the two pieces together, welded a head on one end and a point, or tapping end, on the other. With this gadget I can place



the head on the outside of the fender and the hinged tapper will hit on the inside of the low spot.—*Cedric E. Ady, 2056 W. Carson St., Torrance, Cal.*

Ford V8 Distributor

If the copper vacuum brake tube on a Ford V-8 distributor is removed, it is often difficult to re-fasten it. To make this job easier, cut an inch of the tubing out of the middle and join the two parts with a piece of 3/16 in. I.D. rubber windshield wiper tubing. This will permit the copper tube ends to be so moved that the connections at the manifold and distributor can be easily made. *R. J. Castro, c/o A. O. Graham, Soquel, Cal.*

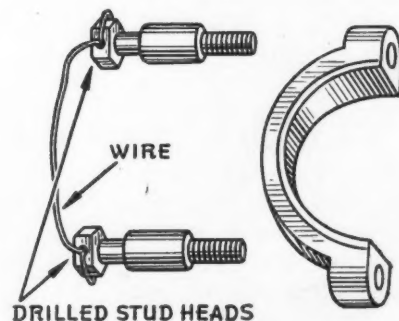
Bearing Puller Aid

Frequently we have trouble pulling the rear axle shafts and bearings on 1937 Plymouth and 1940 Hudson cars.

To make this job easy, we remove the wheel and the brake drum, and run two 2½ inch bolts into the wheel bolt holes inside the drum. Place the drum back on the shaft. Tighten the axle nut and the shaft will pull out.—*Clarence J. Fortney, Route 6, Muskegon, Mich.*

Lock on Con Rod Studs

I had a Lincoln Zephyr in the shop for a crankshaft grind and new bearings. The special lock used on the con rod studs was not available, so I drilled a 5/64-in. hole in



the stud heads with a high-speed drill bit and wired them like a main bearing. This made a safe job and got the car rolling again.—*Wilfrid King, W. C. Morrow Motor Co., Lebanon, Mo.*

Removing Lock Pin

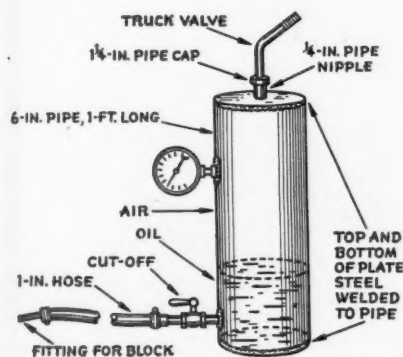
The lock pin on Studebaker champion piston pins is sometimes hard to remove and almost always difficult to install. If the piston pin (after assembly to the rod and piston) is clamped endwise in a vise by means of a couple of ¼ in. pipe nipples or a couple of ⅜ in. bolts, the rod can be moved with ease and the holes for the lock pin alined. *Robert Babiak, 2907 Roanoke Ave., Cleveland 9, Ohio.*

Kinks

\$5

Oil Pressure Tester

We've made an oil pressure tester that we think is a real time saver. When a car comes in with



low oil pressure we check it with this tester and can immediately tell if the trouble is in the main bearings.—*Grant Burleson, Auto Renewal Co., 520 W. Market St., Johnson City, Tenn.*

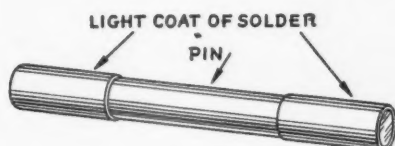
To Replace Starter Armature in Housing

Replacing a starter armature in its housing is greatly simplified if straight pins are used to hold the brushes clear of the armature. The brushes are forced deep into the box holders and wedged there with ordinary straight pins. The armature is then placed in the housing and the pins are removed.—*W. R. Black, Box 7, Contact, Nevada.*

Making a Tight Fit On Fuel Pump Pin

I have found that on several types of fuel pumps the pin through the body and linkage arm becomes loose.

While rebuilding, to tighten the pin, I tin a very light coat of solder on the ends of the pin, leaving space



on which the linkage arm can work freely. This makes a good fit and stops oil leakage. *Wm Cavanaugh, Camp Ayres, Chino, California.*

Replacing Buick Tail-Pipe With Sway Bar in Place

Having replaced a large number of tail pipes on the later Buicks that have coil springs on the rear axle, I have devised a method that is simpler than the removal of the sway bar.

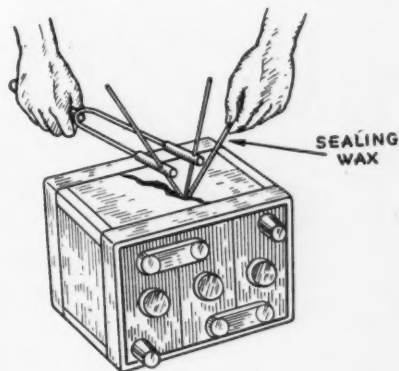
Place a body jack under the bumper and raise the car enough to take the weight off the spring. Remove the bolt at the bottom of the spring (which has a left-hand thread) and push the spring toward the wheel, giving enough clearance for the tail pipe to come down by the stabilizer bar. In some

cases the wheel may have to be removed, but this seldom occurs.—*A. Arnott, Arnott's Garage, Falls Village, Conn.*

Welding Crack in Battery Box with Hand Wax

While working on a battery, I discovered a way to weld a crack in the box. I had never been able to do this, although there may be many ways.

The crack was about 4 in. long, midway on the side. I used my carbon torch on lowest solder heat, with one slightly longer carbon as a puddler in contact with the crack.



I held sealing wax close enough to flow into the crack and mix. This repair is on a mail route and is still functioning.—*F. A. Burrige, Bethel, Vt.*

Buick Brings Out Low Price Series 40 Line

Buick Division of General Motors will begin production this month of its Series 40 Special cars, on a 121-in. wheelbase.

Harlow H. Curtice, General Motors vice president and Buick chief executive, said that the Series 40 cars, to be produced in two body types, are 1946 models in the company's lowest priced group.

The two models are the six-passenger four-door sedan, which carries the OPA factory list price of \$1,346, and the six-passenger two-door sedan with an OPA price of \$1,291.

The new lower priced Buicks are powered with the valve-in-head, precision-bored "Fireball" engine and incorporate numerous design and mechanical improvements.

Among design elements contributing to performance, comfort and

safety are such features as torque tube drive, sealed chassis, all coil springing, broadrim wheels, step-on parking brakes and others. The engines have new carburetion, and cylinder barrels are precision finished as a result of a new manufacturing process. All engines are balanced after assembly for maximum smoothness.

Chrysler Raises Price

Chrysler Corporation announced recently that the Detroit factory retail prices of its Plymouth, Dodge, De Soto and Chrysler cars are "being adjusted in conformance with current costs." These adjustments will vary by body types and will range from an increase of \$8 on the lowest priced Plymouth 4-door sedan to \$104 on the more expensive Chrysler New Yorker 4-door sedan.

Effect of Coal Strike On Automotive Industry

The complete interdependence of American industry was again forcefully demonstrated late in Nov. when the walkout of the nation's soft coal miners threw the automobile industry into confusion. The day after the strike went into effect, automotive manufacturers were predicting that they would be forced to close down in from ten days to two weeks. All said that lack of steel which would result from the strike would be the cause of the shutdowns, rather than a shortage of coal to operate their facilities, since most of them had been stockpiling for some weeks before the strike. Another possible development which might bring automotive production to a sudden halt would be a rigid freight embargo that would halt rail trans-

(Continued on page 110)

Rex Mays at the wheel of his new midget racer. The "Special Jr." has several experimental changes which Mays intends to incorporate in a full sized racing car should they prove successful.



Free World Trade List Affects Auto Industry

Firing the opening guns in the campaign for freer world trade, the State Department has issued a list of thousands of items on which the United States will consider tariff reductions at the forthcoming reciprocal-trade agreement conferences. The formal offer to consider tariff reductions will be made at the negotiations with the 18 nations, which account for two-thirds of the world's trade, in April 1947.

Included in the list, which covers practically everything that the United States could possibly buy abroad, are automobiles, trucks, buses, motorcycles, parts, tires and inner tubes, and ball and roller bearings.

DECEMBER, 1946

a b c d

Automotive Surplus Disposal Picture

There has been considerable digging into the automotive surplus picture by both private and government groups during the past several months. The conclusions reached are about the same in all cases: (1) the disposal problem in relation to vehicles is negligible, since there is little left to sell, and (2) the parts selling job has bogged down miserably.

There are several basic reasons why the parts program has failed. The first of these is the fact that a poor publicity job was done from the very beginning. Many firms in excellent positions to utilize surplus parts still have little or no knowledge of what has been going on. This accounts for the concerted advertising campaign on the part of the War Assets Administration in recent weeks and for the overhauling of sales procedures.

Another reason for delay in selling parts is the fact that manufac-

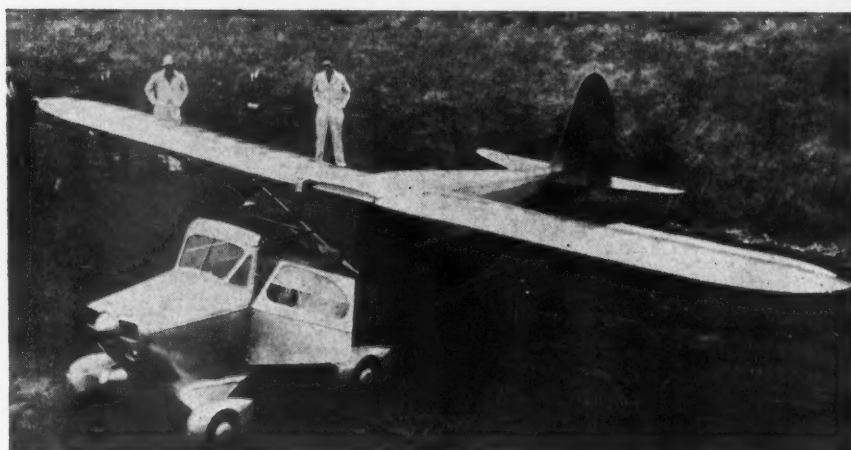
(Continued on page 112)

New Post War Production Record for General Motors

Production of passenger cars by General Motors in the United States last week continued its steady upward trend with a total output of 31,993 cars, or 1526 more than the previous postwar weekly record of 30,467 cars achieved the previous week.

Last week's output was approximately 80 per cent of the average weekly production rate maintained during the 1941 model year.

For the year to date, General Motors has produced 665,647 passenger cars in the United States



The Airphibian, a "drive and fly" car is a two-seated, single engine monoplane with a cruising speed of around 125 mph. To convert it from flying to driving takes one person seven minutes. Its road speed is 45 mph.

compared with 1,709,702 for the same period of 1941.

Truck production in the U. S. by General Motors also showed a rise last week with 9639 units turned out compared with 9153 for the previous week. Total U. S. output of trucks by GM for this year to date is 260,398 compared with 383,746 for the same period of 1941.

It was pointed out that GM's car and truck production had not yet felt the effects of the current coal strike and that the 30 strikes among GM suppliers—the same number as the week previous—were not seriously hampering production.

Following is a comparison of car and truck production for the year to date as compared with the same period of 1941:

| | Jan. 1 to Nov. 22, 1946 | Jan. 1 to Nov. 22, 1941 |
|-----------------------|-------------------------------|-------------------------------|
| Chevrolet | | |
| Passenger | 315,225 | 378,832 |
| Truck | 229,908 | 285,502* |
| Pontiac | 108,449 | 265,415 |
| Oldsmobile | 90,796 | 216,527 |
| Buick | 127,792 | 292,842 |
| Cadillac | 23,385 | 56,086 |
| GMC Truck & Coach | | |
| Trucks | 28,529 | 96,261* |
| Coaches | 1,961 | 1,983 |
| G.M. of Canada | 43,030 | 98,319* |
| Total U.S. and Canada | 969,075 | 2,191,767 |

Willys To Concentrate On Utility Line

In a recent interview with executives of Willys-Overland, a representative of this publication was told that the company would concentrate its production efforts on the Utility line, comprising the Jeep, Station Wagon, and later the new truck line. On the basis of current allocations of materials, Willys will continue its present schedule of 7000 Jeeps per month and 2000 Station Wagons per month.

Production of passenger cars, on which specification details were given last month, is delayed indefinitely and until materials are more readily available.

The 1947 truck line, comprising the 2T, two-wheel drive chassis, and the 4T, four-wheel drive chassis is not expected to be announced until some time early in 1947. Interesting feature of the new truck line will be the method of rating these vehicles. Rating will be on the basis of useful payload—¾ ton for the 2T models; one-ton for 4T models.

1946 Engine and Tune-up Specifications

| MAKE AND MODEL | ENGINE | | | | TUNE-UP DATA | | | | | | | | | | FRONT AXLE | | | | | | | | | | | | | | | | | |
|--------------------------------|-----------------|-----------------------------------|-------------|-------------------------------|---|-------------------|-----------------------|---------------------|---------------|---------------------------|---------------------------|-------|---------|---------------------|------------------------|--------|----------|-------------------|------------------|----------------|---------------|---------------|--------------|-----------------------------|--------------|--------------|---|--------------------------------|-----------------|------------|----------------|---|
| | Wheelbase (In.) | No. of Cylinders, Bore and Stroke | Taxable Hp. | Piston Displacement (Cu. In.) | Maximum Brake Hp. (at Specified R.P.M.) | Compression Ratio | Cranking Speed (Lbs.) | Spark Plug and Type | Rings | | VALVES | | | | | | IGNITION | | | | Caster (Deg.) | Camber (Deg.) | Toe-in (In.) | King Pin Inclination (Deg.) | | | | | | | | |
| | | | | | | | | | No. and Width | No. and Width Compression | Operating Tapet Clearance | Inlet | Exhaust | Stem Diameter (In.) | Deg. Inlet or After TC | Timing | | Breaker Point Gap | Cam Angle (Deg.) | Spark Plug Gap | | | | | Timing | | Rods Removed From Crankcase Capacity, Refill (Qts.) | Cooling System Capacity (Qts.) | | | | |
| | | | | | | | | | | | | | | | | Inlet | Exhaust | | | | | | | | Timing Marks | Timing Marks | | | | | | |
| Buick.....Eight, 40 | 121 | 8-3 1/4x4 1/4 | 30.6 | 248.0 | 110-3600 | 6.3 | 112 | AC-48 | 2-3/8 | 2-3/8 | 45 | 45 | .015H | .015H | .372 | .015H | .015H | 13BT | None | .015 | 31 | .025 | 4BT | Fly | A | 5 1/2 | 13 | +3/8=3/8 | N 1/2 to +1 1/2 | 0 to 1/8 | 4 1/4 | |
| Buick.....Eight, 50 | 124 | 8-3 1/4x4 1/4 | 30.6 | 248.0 | 110-3600 | 6.3 | 112 | AC-48 | 2-3/8 | 2-3/8 | 45 | 45 | .015H | .015H | .372 | .015H | .015H | 13BT | None | .015 | 31 | .025 | 4BT | Fly | A | 5 1/2 | 13 | +3/8=3/8 | N 1/2 to +1 1/2 | 0 to 1/8 | 4 1/4 | |
| Buick.....Eight, 70 | 129 | 8-3 1/4x4 1/4 | 37.8 | 320.2 | 144-3600 | 6.6 | 114 | AC-48 | 2-3/8 | 2-3/8 | 45 | 45 | .015H | .015H | .372 | .015H | .015H | 14BT | None | .015 | 31 | .025 | 6BT | Fly | A | 7 1/2 | 16 1/2 | +3/8=3/8 | N 1/2 to +1 1/2 | 0 to 1/8 | 4 1/4 | |
| Cadillac Eight, 61, 62, 60 | (a) | 8-3 1/4x4 1/4 | 39.2 | 346.0 | 150-3600 | 7.2 | 100 | AC-104 | 2-3/8 | 2-3/8 | 45 | 45 | .015H | .015H | .342 | .015H | .015H | TC | VD | .015 | 31 | .030 | 5BT | VD | A | 6 1/2 | 25 | N 1 1/2 to N 2 1/2 | N 1 1/2 to +3/4 | 1/8 to 3/8 | 5 5/8 | |
| Cadillac.....Eight, 75 | 136 | 8-3 1/4x4 1/4 | 39.2 | 346.0 | 150-3600 | 7.2 | 100 | AC-104 | 2-3/8 | 2-3/8 | 45 | 45 | .015H | .015H | .342 | .015H | .015H | TC | VD | .015 | 31 | .030 | 5BT | VD | A | 6 1/2 | 25 | N 1 1/2 to N 2 1/2 | N 1 1/2 to +3/4 | 1/8 to 3/8 | 5 5/8 | |
| Chevrolet.....Six | 116 | 6-3 1/4x3 3/4 | 29.4 | 216.5 | 90-3300 | 6.5 | 112 | AC-M8 | 2-1/2 | 2-1/2 | 30 | 30 | .006H | .013H | .341 | .006H | .013H | 3BT | Fly | .018 | 39 | .040 | 5BT | Fly | A | 5 | 15 | 0-1/2 | N 1 1/2 to +3/4 | 0 to 1/8 | 4 1/4=3/4 | |
| Chrysler.....Six, C-38 | 121 1/2 | 6-3 1/4x4 1/4 | 28.4 | 250.8 | 114-3600 | 6.6 | 125 | AL-A5 | 2-3/8 | 2-3/8 | 45 | 45 | .008H | .010H | .340 | .008H | .010H | 12BT | VD | .020 | 34 1/2 | .025 | 2AT | VD | A | 5 | 17 | N 1 to +1 | 0 to 3/4 | 0 to 1/8 | 4 1/4 to 6 | |
| Chrysler.....Six, C-39 | 127 1/2 | 6-3 1/4x4 1/4 | 33.8 | 323.5 | 135-3400 | 6.7 | 125 | AL-A5 | 2-3/8 | 2-3/8 | 45 | 45 | .008H | .010H | .340 | .008H | .010H | 12BT | VD | .018 | 27 | .025 | 2AT | VD | A | 6 | 26 | N 1 to +1 | 0 to +3/4 | 0 to 1/8 | 4 1/4 to 6 | |
| Crosley.....Four, CC-46 | 80 | 4-2 1/2x2 1/2 | 10.0 | 44.0 | 26.5-5400* | 7.5 | 135 | AL-A7 | 2-1 1/2 | 2-1 1/2 | 45 | 45 | .006C | .006C | .312 | .006C | .006C | 5BT | None | .020 | 46 | .025 | 12BT | Fly | B | 3 | 5 | 8 1/2 | 2 | 1/8 to 1/4 | 6 1/2 | |
| De Soto.....Six, S-11 | 121 1/2 | 6-3 1/4x4 1/4 | 28.3 | 236.6 | 109-3600 | 6.6 | 125 | AL-A5 | 2-3/8 | 2-3/8 | 45 | 45 | .008H | .010H | .340 | .008H | .010H | 12BT | VD | .020 | 34 1/2 | .025 | TC | VD | A | 5 | 17 | N 1 to +1 | 0 to +3/4 | 0 to 1/8 | 4 1/4 to 6 | |
| Dodge.....Six, D-24 | 119 1/2 | 6-3 1/4x4 1/4 | 25.3 | 230.2 | 102-3600 | 6.7 | 120 | AL-A5 | 2-3/8 | 2-3/8 | 45 | 45 | .008H | .010H | .340 | .008H | .010H | 12BT | VD | .020 | 34 1/2 | .025 | 2AT | VD | A | 5 | 15 | N 1 to +1 | 0 to +3/4 | 0 to 1/8 | 4 1/4 to 6 | |
| Ford.....Eight, 68A | 114 | 8-3 1/4x3 3/4 | 32.5 | 239.4 | 100-3600 | 6.7 | 160(b) | Ch-H10 | 2-3/8 | 2-3/8 | 45 | 45 | .011C | .015C | .311 | .011C | .015C | TC | DH | .015 | 35 | .025 | 4BT | ..... | A | 5 | 22 | 5 1/2 to 8 | 1 | 1/8 | 8 | |
| Frazer.....Six, F-47 | 123 1/2 | 6-3 1/4x4 1/4 | 26.3 | 226.0 | 100-3600 | 7.3 | ..... | Ch..... | 2-3/8 | 2-3/8 | 30 | 45 | .010C | .014C | .341 | .010C | .014C | 10BT | FVD | .020 | 38 | .032 | ..... | FVD | A | 5 | 15 | 0 to 3/4 | 1/4 to N 1/4 | 0 to 1/8 | 5 1/2 to 6 | |
| Hudson.....Six, 51-E2 | 121 | 6-3 1/4x4 1/4 | 21.6 | 212.0 | 102-4000* | 6.5 | 120 | Ch-J9 | 2-3/8 | 2-3/8 | 45 | 45 | .006H | .008H | .341 | .006H | .008H | 10 1/2 BT | Fly | .020 | 34 | .032 | 1 1/2 BT | Fly | A | 4 1/2 | 13 | 0-1/4 | 1/4=1/4 | 1/8 to 1/4 | 3° 38' | |
| Hudson.....Eight, 53-54 | 121 | 8-3 1/4x4 1/4 | 28.6 | 254.0 | 128-4200* | 6.5 | 119 | Ch-J9 | 2-3/8 | 2-3/8 | 45 | 45 | .006H | .008H | .341 | .006H | .008H | 10 1/2 BT | Fly | .017 | 30 1/2 | .032 | TC | Fly | A | 7 | 18 | 0-1/4 | 1/4=1/4 | 1/8 to 1/4 | 3° 38' | |
| Kaiser.....Six, K-100 | 123 1/2 | 6-3 1/4x4 1/4 | 26.3 | 226.2 | 100-3600 | 7.3 | ..... | Ch..... | 2-3/8 | 2-3/8 | 30 | 45 | .010C | .014C | .341 | .010C | .014C | 10BT | FVD | .020 | 38 | .032 | TC | FVD | A | 5 | 15 | 0 to 3/4 | N 1/4 to +1/4 | 0 to 1/8 | 5 1/2 to 6 | |
| Lincoln.....Twelve, 68H | 125 | 12-2 1/4x3 3/4 | 41.4 | 305.0 | 130-3600 | 7.2 | 167(b) | Ch-H10 | 2-3/8 | 2-3/8 | 45 | 45 | .011C | .015C | .311 | .011C | .015C | TC | DH | .014 | 35 | .027 | 2BT | None | A | 5 | 27 | 4 | 3/4 to 1 | 1/8 to 1/4 | 1/8 to 1/4 | 4 |
| Mercury.....Eight, 69M | 118 | 8-3 1/4x3 3/4 | 32.5 | 239.4 | 100-3600 | 6.7 | 160(b) | Ch-H10 | 2-3/8 | 2-3/8 | 45 | 45 | .011C | .015C | .311 | .011C | .015C | TC | DH | .015 | 35 | .025 | 4BT | ..... | A | 5 | 22 | 7.2 | 1 | 1/8 | 8 | |
| Nash.....Six, 4640 | 112 | 6-3 1/4x3 3/4 | 23.4 | 172.6 | 82-3600 | 7.1 | 120 | AL-A7 | 2-1 1/2 | 2-1 1/2 | 45 | 45 | .015 | .015 | .341 | .015 | .015 | 6BT | ..... | .020 | ..... | .025 | TC | VD | A | 5 | 14 | 1/4 to 3/4 | 1/4 to 3/4 | 1/8 to 1/4 | 7 1/2 | |
| Nash.....Six, 4660 | 121 | 6-3 1/4x4 1/4 | 27.3 | 234.8 | 112-3400 | 6.8 | 115 | AC-45 | 2-1 1/2 | 2-1 1/2 | 44 | 44 | .015 | .015 | .372 | .015 | .015 | 24 1/2 BT | ..... | .020 | ..... | .025 | 4BT | VD | A | 6 | 17 | 0 to 1/4 | 1/4 to 3/4 | 1/8 to 1/4 | 4 1/4 | |
| Oldsmobile.....Six | 125 | 6-3 1/4x4 1/4 | 29.4 | 238.1 | 100-3400 | 6.5 | 115 | AC-48 | 2-3/8 | 2-3/8 | 30 | 45 | .008H | .011H | .342 | .008H | .011H | 5BT | Fly | .020 | 35 | .040 | TC | Fly | A | 5 | 18 1/2 | 0 to N 1/2 | N 1/4 to +3/4 | 1/8 to 1/4 | 4° 51' 10" | |
| Oldsmobile.....Eight | 125 | 8-3 1/4x4 1/4 | 33.8 | 267.1 | 110-3600 | 6.5 | 100 | AC-48 | 2-3/8 | 2-3/8 | 30 | 45 | .008H | .011H | .342 | .008H | .011H | TC | ..... | .015 | 31 | .030 | 2BT | Fly | A | 6 | 20 1/2 | 0 to N 1/2 | N 1/4 to +3/4 | 1/8 to 1/4 | 4° 51' 10" | |
| Packard.....Six, 2100 | 120 | 6-3 1/4x4 1/4 | 29.4 | 245.0 | 105-3600 | 6.7 | ..... | (d) | 2 (e) | 2 (e) | 30 | 45 | .007H | .007H | .339 | .007H | .007H | 18T | ..... | .018 | ..... | .025 | 4BT | ..... | ..... | 5 | 14 | N 1=1/2 | 0=1/2 | 0 to 1/8 | 5° 35' | |
| Packard.....Eight, 2101 | 120 | 8-3 1/4x4 1/4 | 33.8 | 282.0 | 125-3600 | 6.8 | ..... | (d) | 2 (e) | 2 (e) | 30 | 45 | .010H | .010H | .339 | .010H | .010H | 18T | ..... | .012 | ..... | .025 | 5BT | ..... | ..... | 5 1/2 | 17 | N 1=1/2 | 0=1/2 | 0 to 1/8 | 5° 35' | |
| Packard.....Eight, 2103, 2106 | 127 | 8-3 1/4x4 1/4 | 39.2 | 356.0 | 165-3600 | 6.8 | ..... | (d) | 2 (e) | 2 (e) | 30 | 45 | .010H | .010H | .340 | .010H | .010H | 4BT | ..... | .012 | ..... | .025 | 4BT | ..... | ..... | 7 | 20 | N 1=1/2 | 0=1/2 | 0 to 1/8 | 5° 35' | |
| Plymouth.....Six, P-15 | 117 | 6-3 1/4x4 1/4 | 25.3 | 217.8 | 95-3600 | 6.6 | 115 | AL-A5 | 2-3/8 | 2-3/8 | 45 | 45 | .008H | .010H | .340 | .008H | .010H | 12BT | VD | .020 | 34 1/2 | .025 | TC | VD | A | 5 | 15 | N 1 to +1 | 0 to +3/4 | 0 to 1/8 | 4 1/4 to 6 | |
| Pontiac.....Six, 1946-25, 26 | (f) | 6-3 1/4x4 1/4 | 30.4 | 239.2 | 93-3400 | 6.5 | 160A | AC-45 | 2-3/8 | 2-3/8 | 30 | 45 | .011H | .011H | .312 | .011H | .011H | 5BT | CC | .020 | 37 | .023 | 2BT | Fly | ..... | 5 | 18 | N 1 1/2 to N 1 | 1/4 to N 1/4 | 0 to 1/8 | 4 1/4 to 4 1/2 | |
| Pontiac.....Eight, 1946-27, 28 | (f) | 8-3 1/4x4 1/4 | 33.8 | 246.9 | 107-3700 | 6.5 | 158A | AC-45 | 2-3/8 | 2-3/8 | 30 | 45 | .011H | .011H | .312 | .011H | .011H | 5BT | CC | .020 | 31 | .023 | 2BT | Fly | ..... | 5 | 19 1/2 | N 1 1/2 to N 1 | 1/4 to N 1/4 | 0 to 1/8 | 4 1/4 to 4 1/2 | |
| Studebaker.....1947-48 | ..... | 6-3-4 | 21.6 | 169.6 | 80-4000 | 6.5 | 105 | Ch-J7 | 2-(g) | 2-(g) | 45 | 45 | .016C | .016C | .312 | .016C | .016C | 15BT | FVD | .020 | 35 | .022 | 2BT | FVD | A | 3 | 10 | 1 1/2 | 1/4=1/4 | 1/8 to 1/4 | 5 1/2 | |

*—With standard accessories.
 AL—AC Spark Plug Division
 AT—The Electric Auto-Lite Corp.
 AT—ATF Co.
 (a)—Model 61—126 in.; Model 62—129 in.;
 (b)—At 2400 R.P.M.
 A—Above (Rods removed from)
 AA—Automatic Adjustment
 B—Below (Rods removed from)
 BT—Before Top Center
 CH—Champion Y&A
 DH—Distributor Housing
 FVD—Flywheel vibration damper
 Fly—Flywheel
 TC—Top Center
 TG—Timing Gears
 VD—Vibration Damper
 HA—Hydraulic
 H—H
 (g)—Top ring 1/8; Middle ring 1/4



CLEARING HOUSE

FOR SERVICEMEN'S QUERIES

Bill Toboldt, Editor, Motor Age

Installing Timing Chain On 1929 Cadillac

Will you please send us the procedure for installing timing chain on a 1928 or 1929 V-8 Cadillac in regard to the marks on the gears?—Warren Willey, Motor Inn Garage, Earlville, Ill.

TO time the valves on a 1928 or 1929 Cadillac the intake tappets should be set to .004 in. and the exhaust tappets to .006 in. When the tappets are so adjusted the intake should open $9\frac{1}{2}$ degrees or three flywheel teeth before top center and the exhaust valve should open 5 degrees or $1\frac{1}{2}$ flywheel teeth after top center. Valve timing marks will be found on the flywheel with the inspection opening on the right side of the flywheel housing.

Repairing Leak in Freeze Plug at Rear of Engine

I have a 1938 Model 40 Buick Special. The engine has developed a water leak in the freeze plug which is in back of the engine just below the valve cover plate. The space there is so narrow a person can't even put a hand across the plug. Is there any way to either replace the plug or stop the leak without lifting out the engine or drilling a piece of metal out of the partition under the dash?—John F. Balzer, 5712 Broomall St., Philadelphia 43, Pa.

DO not see any reason why you cannot make a repair on the leak-

ing freeze plug on your 1938 Model 40 Buick without removing the engine. Some mechanics frequently make this repair by using an iron cement, which they apply with a spatula which they can work down between the engine and the dash. Of course, the block should be cleaned first and this can be done satisfactorily in most cases with gasoline and a long handled paint brush.

Some mechanics claim they can also install a freeze plug in this position by springing out the dash. The old freeze plug is removed by prying it out with a long pointed tool and the new one, after it is placed in position, is spread by applying pressure at the center by means of a lever. Of course, it is necessary when installing a freeze plug to coat it liberally with red lead or some special compound for the purpose.

Trouble with Rear Grease Seals Leaking

We are having trouble making rear grease seals hold. We have tried several different makes and have had the best luck with National seals. We install these, being very careful not to injure the seal in any way, but they don't hold but a very short time. We have tried packing them with hard grease with some degree of success. We have talked with other mechanics in this locality, and they are having the same trouble. Would this be in our workmanship or the con-

struction of the grease seal itself?—Kenneth Preble, 3 Union St., Brewer, Maine.

THE usual cause for failure of grease seals is not soaking them thoroughly in lubricating oil for a couple of hours before use. In this way the seal becomes impregnated with lubricant and will become somewhat larger in size and in that way prevent grease from flowing out along the shaft.

I would also like to point out that some mechanics install only the outer seal and, of course, this is not sufficient. Both inner and outer seals must be replaced in order to stop grease leakage.

In some cases the axle is also badly worn and regardless of the seal the grease will continue to leak.

Transmission Oil Flows To Differential

Will you kindly explain the reason for the transfer of gear oil from the transmission to the differential on a 1940 Model 90 Buick, and what to do to correct it?—Frederick Haug, 202 E. 77th St., New York City, N. Y.

THE reason that gear oil from the transmission flows back to the rear axle on the Buick is probably caused by a defective oil seal at the rear end of the transmission. It will be necessary to remove this and install a new seal in order to overcome your trouble.

(Continued on page 60)



CLEARING HOUSE

FOR SERVICEMEN'S
QUERIES

Motor Tune-Up for 1937 Buick Engine

I am having some trouble with the distributor advance control on my 1937 Buick Series 40. The car runs good, starts good and pulls fairly well. Pickup isn't what it should be. Doesn't idle very good at any adjustment on carburetor. The main trouble is this car will not ping or make a gasoline knock at anytime when accelerating. Nothing but regular grade of gas is used.

I have advanced the distributor two notches behind the 10 degrees advance. I put new vacuum advance control on and a seal-o-liner which is a thin ring with a groove in it and three undersize balls. When I installed the seal-o-liner the plate then moved free and easy. The points are good.

I think the vacuum line is clean because it will hold a small piece of paper when I accelerate the engine. This Buick was overhauled a couple of months ago—new rings, valves ground and reseated and all new gaskets.—Cecil Thomlison, Desloge, Mo.

THE first thing I would do on your 1937 Buick in order to overcome the trouble you describe would be to make a compression test on each cylinder. I appreciate, of course, that you have just installed new rings and had the valves ground, but it is absolutely imperative that you have full compression in each cylinder in order to get maximum power. According to factory specifications this car should have 120 lb. compression in each cylinder when the engine is cranked with the starting motor.

The next step would be to thoroughly overhaul the carburetor,

for if the mixture is excessively rich as the result of high float level, incorrect metering-rod setting or leaking economizer, the engine will not ping regardless of where the spark may be set. In this connection I think it would probably be best to install a new or rebuilt carburetor.

The next step is to check and thoroughly overhaul the distributor to make sure the centrifugal advance is operating correctly and that the vacuum advance is also in good condition.

It is also important that you check the manifolds to make sure there are no leaks in the intake manifold at any point.

Truck Engine Used with Passenger Car Gear Ratio

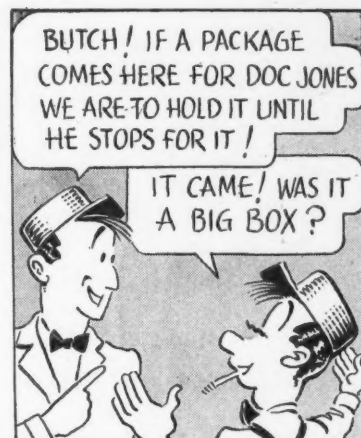
Received your answer on interchanging 1937 Chevrolet truck motor in a 1936 Chevrolet Stand., and I appreciate the information very much.

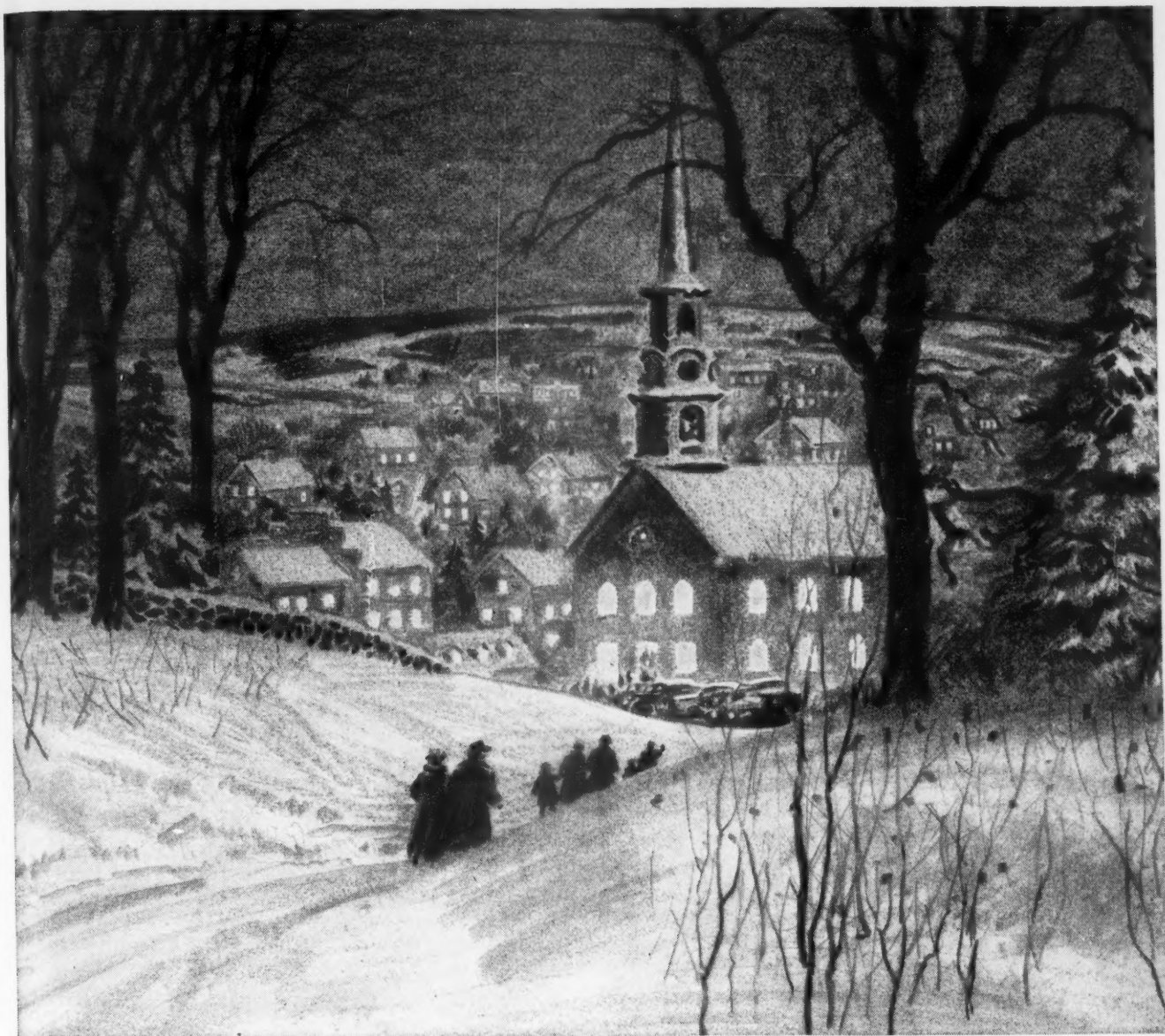
Now I'd like some further information on the subject. How much harder on the 1936 Standard ring gear and pinion would the 1937 truck engine be? Would it have more speed and power with the original 1936 ring gear and pinion? Please advise me as to what gear ratio to use to get the best results out of the 1937 engine in relation to speed and power.—Douglas Heater, Rt. 2, Box 221, Lebanon, Ore.

I DO not think you will have any difficulty in using a Chevrolet truck engine with a passenger car rear. The reason for this is, of course, that the passenger car and truck engines are virtually identi-

(Continued on page 99)

BUTCH . . .





Studebaker's 95th Christmas Greeting

Once again this year, for the 95th time since its business was founded in 1852, Studebaker salutes its treasured friends, old and new, with a warm-hearted "Merry Christmas" . . . The men and women of Studebaker share with you the fervent wish that in the months ahead all our nation's hopes deferred will glow with bright fulfillment.

Studebaker

Part of America's life and traditions
since February 1852



NEW PRODUCTS

Undercutter to Be Used With Commutator on Lathe

The Dixie Precision Universal Mica Undercutter, made by the Dixie Machine Tool Co., of Cincinnati, is said to turn, undercut and polish commutators while they are in position on the lathe. It fits any lathe from 6-in. to 20-in. swing, and handles commutators up to 4



in. in diameter. The manufacturer also states that it can be positively controlled for adjusting exact depth of undercut.

Engine Overhaul Stand

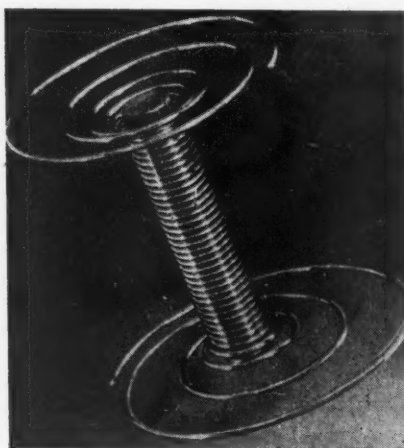
A new engine overhaul stand, which will hold both vertical and V-8 engine blocks, is announced by Cam Tool Co., of Oakland, Cal., under the brand name Kaasco.

The stand does not require adjustment for different widths of engine blocks and will hold a vertical block by either head or pan side. Mounted on casters, it is 33 in. high, and the manufacturers state

that it will enable one man to handle the entire overhaul job. A locking device holds the block either vertically or horizontally, and either side up.

Cooling System De-Scaler Drops Into Radiator

The Butler Engineering Company, of New Orleans, offers a cooling system de-scaler, known as the Butler ATI Automotive De-Scaler. To be fitted into the top hose connection or dropped into the top of the radiator, this de-scaler produces an electrolytic action when immersed in water, and the core, made of a special composition, decomposes as a result of this action. The products of the decomposition then attach themselves to the minerals in the water, precipitating them to the bottom of the radiator, where they may be removed by flushing or draining. It



also checks electro-chemical and oxygen corrosion and is not affected by anti-freeze solutions. It is a modification of Butler equipment used in industrial boilers and heat exchangers.

Small Vacuum Cleaner Operates Off Manifold

A flashlight-sized vacuum cleaner for automobile interiors is the new product of Craft Industries, Inc., of Buffalo. Compact enough to store in the glove compartment, the *Vacumite* operates off the engine manifold vacuum, to which it



is connected, through the wall of the glove compartment by means of a 12-ft. hose to the windshield wiper. In operation, the engine is run at idling speed, a valve is switched on, and a turbulence vacuum in the head sucks up the dirt and dust. The unit is molded of Tenite, a cellulose plastic.

New High Temperature Manifold Coupling

A new high temperature manifold coupling has been introduced by Marman Products, Inc., of Inglewood, Cal.

Claimed to afford a positive seal for all types of manifold joints operating under conditions of high temperature and excessive vibration, the wedging action of the retainer ring draws together the flanges of the manifold joint as the coupling is tightened. One of the features of the design is the vented construction of the retainer ring which makes it possible for the coupling to remain at one-half the temperature of the manifold, giving an increasingly positive seal as the temperature of the manifold rises.

(Continued on page 64)



Frisky HORSEPOWER

FOR FROZEN MORNINGS

★ Yes sir, cars start fast even in coldest weather —with Casite. That goes over big with motorists everywhere . . . means extra profits for you.

Millions are familiar with Casite's "quick starting" guarantee. Millions more are learning about it over their radios and through their favorite magazines.

Order Casite from your jobber today. Sell it for break-in of new motors and tune-up of older motors, as well as for quick starting of all motors. Casite customers keep coming back for more.

**THE CASITE CORPORATION
HASTINGS, MICH.**

*A pint in the crankcase every oil change or every 1000 miles
A pint through the air intake every 3 months*

TWO GREAT RADIO SHOWS

"I DEAL IN CRIME" • Saturday Nights • ABC

"ADVENTURES OF MICHAEL SHAYNE" • Tuesday Nights • MBS

CASITE

**GUARANTEES QUICK STARTING
IN WINTER WEATHER OR
DOUBLE-YOUR-MONEY-BACK**

LIST PRICE 65¢

A PINT



WE GUARANTEE that any motor capable of being started in a warm room will start promptly in the coldest weather when Casite is added to the crankcase according to instructions. If your car fails to start quickly, you get double-your-money-back by filling out guarantee certificate and mailing it to The Casite Corporation, Hastings, Michigan. Maximum refund is \$1.30 per pint, twice the nationally advertised price of Casite.

CASITE CLEANS MOTORS • KEEPS MOTORS CLEAN

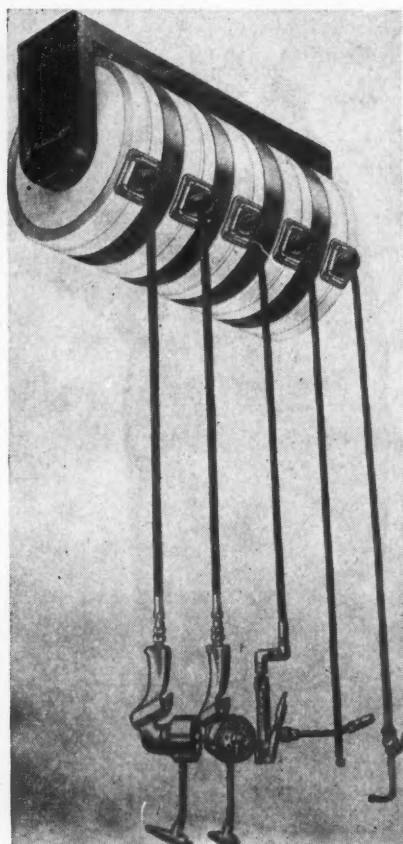


NEW PRODUCTS

(Continued from page 62)

New Hose Reel Banks

The Gray Co., Inc., of Minneapolis, announces the addition of new hose reels and hose reel banks to its line. Available in banks or individually, Grace Hose Reels dispense chassis and gear lube, air and water in any of several combinations adaptable to the needs of



large, medium or small shops.

One reel hanger makes possible either ceiling or wall mounting. Chassis, gear and water reels are equipped with 20-ft. hoses; air reels have 25-ft. hoses.

Hydraulic Floor Crane

The new Ruger Hydraulic Floor Crane has only two controls, a pump to raise the load, and a

finger-tip release valve to lower the load. It is available in three sizes, 1-ton, 2-ton and 3-ton. All are mounted on roller bearing large diameter wheels with double swiveling casters at the rear.

The Ruger Equipment Co., Inc., of Cleveland, is the maker.

Motorola Display Board

A new merchandising display board makes it possible to conduct a complete sales demonstration of the new Motorola Automatic Push Button Gasoline Car Heater in actual operation in the dealer's store. The large demonstration board, labeled D-1088, is designed for use in the store, while a smaller board, D-1089, is a portable demonstration unit for salesmen.

Lever to Aid in Replacing Wheel

The Easy-Lift Wheel Lifter, manufactured by the T. E. D. Corp., of Los Angeles, is designed to simplify wheel changes by lever-lifting the wheel into place and automatically guiding it over the lugs

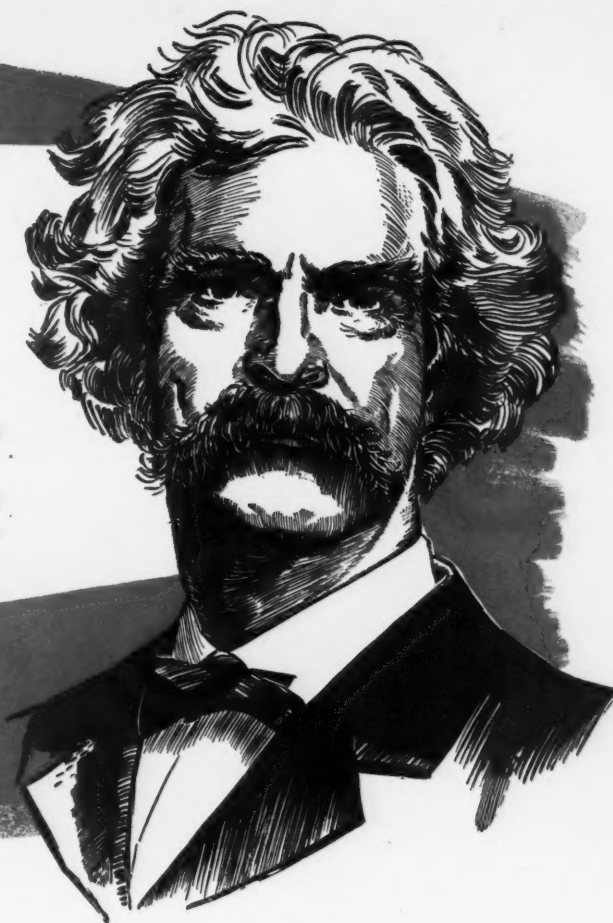


so that it will drop easily into place. The prongs are inserted through the two bottom holes of the wheel, the grooved prong ends are placed over the two bottom lugs on the drum, and the handle is lifted until the wheel drops in place.



Mark Twain *said it...*

**"We can secure the people's approval
if we do right and try hard."**

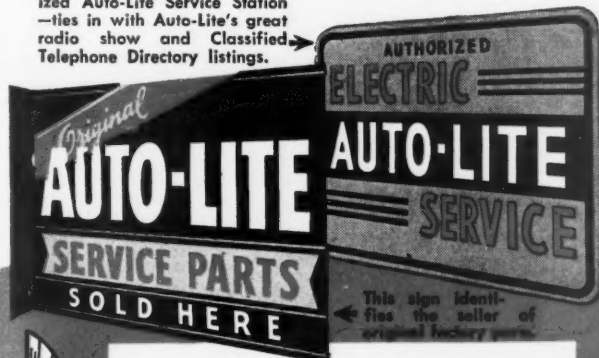


STILL TRUE... ORIGINAL FACTORY PARTS AND HONEST WORKMANSHIP MAKE FRIENDS, BUILD BUSINESS

The millions of cars on the road today that carry Auto-Lite parts as standard equipment represent a tremendous ready-made market for

every Auto-Lite service outlet. Car dealers, garage operators and service station owners who are planning a successful future, and who can qualify for an Auto-Lite Franchise, can get complete information from the nearest Auto-Lite Central Distributor, or by writing to

This sign identifies an authorized Auto-Lite Service Station—ties in with Auto-Lite's great radio show and Classified Telephone Directory listings.



This sign identifies the seller of original factory parts.

**Auto-Lite Has Special Deals
To Fit Your Business
ASK ABOUT THEM TODAY**

THE ELECTRIC AUTO-LITE COMPANY

Parts and Service Division

SARNIA, ONTARIO

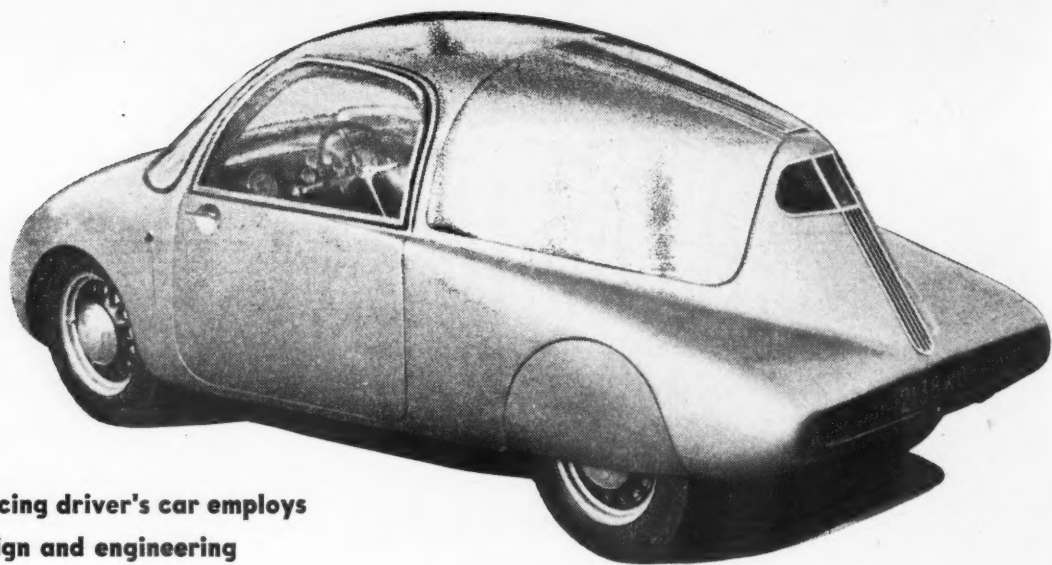
TOLEDO 1, OHIO



AUTO-LITE ON THE AIR—Dick Haymes, Helen Forrest, Gordon Jenkins' Orchestra—every Thursday night, 9:00 P.M.—E.T. on CBS

AUTO-LITE

Starting·Lighting·Ignition



The great French racing driver's car employs
advanced design and engineering

French Wimille Announced

A NEW rear-engined three-seater, aerodynamically designed, has been produced by Jean-Pierre Wimille, noted French race driver. It is available in three horsepower ranges. The car appears to be rather conservative in comparison with some of the other recent continental types.

Center steering, exceptional forward visibility for the driver, and low total weight are the most arresting features of this high performance design.

The six cylinder 120 degree V engine follows the trend toward space-saving "flat" power installations. "Square" cylinders, of 2.835 in. bore and 2.441 in. stroke, provide a displacement of 92.4 cu. in. The block is aluminum alloy with cylinder liners and the heads are aluminum with valve seat inserts. The valves themselves are inclined in the head and are operated by rockers and short pushrods from high-placed camshafts. Lubrication is of the dry sump type, oil being first led to the rear plain bearing and through the shaft to the three roller bearings. Rollers are used for the connecting rod bearings. The cylinder barrels are recessed into the head, a conical joint protecting the gasket from direct contact with the explosive charge. The directed water supply completely surrounds the valve seats and plugs. The engine is rubber mounted at three points and slightly overhangs the rear axle. The order of mounting from front to back is engine, clutch, transmission, with the power takeoff carried forward under the engine and final drive to the wheels by transverse shafts and Spicer joints. Gear shifting is accomplished through a Cotal electro-magnetic four-speed transmission, long a

favorite with European race drivers. The radiator is mounted forward, carrying its coolant rearward by means of tubing mounted inside the chassis tubes. In normal use a fan is not required, but a thermostatically controlled ventilator is provided for slow running or standing still.

Three engine types are available, with 80 per cent of the parts interchangeable. The standard engine has coil valve springs and develops 80 hp at 5000 rpm. The high performance model has torsion bar springs and develops 110 hp, while the third type, also with torsion bar springs, is Rootes blower-equipped and develops 200 hp, with special fuel, at 7000 rpm. Chassis and bodywork are identical for the three types.

The main chassis members are large diameter steel tubes, on 18 in. centers, carrying the power plant and suspension elements, while outriggers carry the body, which is welded on but carries no stress. Suspension, front and rear, is by torsion bars, mounted longitudinally in front and transversally at the rear. The radius arms are welded steel stampings. Brake drums are light alloy with iron liners. Wheels are also of light alloy. The car has a wheelbase of 96 in. and a tread of 48 in., front and rear.

The aluminum body seats three, with the driver occupying a central position somewhat forward of the passengers. This arrangement provides full elbow room for the driver and, incidentally, may be Wimille's solution of the problem of allowing both leg room and steering clearance on a rear engine car in which the front seat is well forward.

(Continued on page 86)

*Better Care for Cars!
Big Business for You!*



the complete line of chemical maintenance products

When you sell WHIZ chemical maintenance products, you sell those extra miles of carefree motoring that drivers demand. That's why it will pay you well to feature WHIZ, the oldest . . . the most complete . . . the most heavily advertised line in this big market.

*Ask your jobber salesman for details,
or write for catalog and price list.*

R. M. HOLLINGSHEAD CORPORATION
CAMDEN, NEW JERSEY; TORONTO, CANADA

PRODUCTS OF
Hollingshead
LEADER IN MAINTENANCE CHEMICALS

Black Market Prices Sky Rocket

(Continued from page 36)

fool \$3,300 for a \$1,900 car—legally or morally that pasting is no worse than many of us take when the wife buys a new hat—but the behind-the-scenes problem of where that gyp is getting his cars.

Not even the Black Market bigwig can keep prices up. They will follow their own downward trend.

His market will rapidly disappear as more cars are produced and the number of suckers who are willing and able to pay over price is reduced. But in the meantime that disreputable dealer is doing the industry inestimable harm.

It is no secret that Good Will throughout the car field needs bol-

stering very badly. Years of saying, "I haven't any." "I can't get you one" have left it limp. Now, just as it is beginning to recover, along comes this set-back. Our Good Will is basically sound, and a general view of the automotive industry is brighter than it has been in many years. But this one problem, like one rotten clam in a good barrel, will give the whole barrel the reputation of stinking.

New cars are finding the used car lots via the same road traveled under OPA. We went around Philadelphia to find out if there happened to be any change in the now familiar pattern.

Some years ago a political cartoon showed a circle of men each one pointing the finger of blame at his neighbor. The fingers made a complete circle. We know just how that cartoonist felt.

According to a responsive source of information whose sympathies necessarily lie with the new car dealer, this is the pitch. No franchised dealer would dare sell his manufacturer's product up the river—even for a fat price—because he would stand in imminent danger of losing his franchise. A private individual, however, signs his name on the lists of several dealers. As his turn comes along, he buys a car from each of the dealers, then he turns around and sells them, at a good stiff premium, to a used car dealer who is not bound by business ethics. The used car dealer adds a princely amount to the pre-

(Continued on page 70)



You, as an independent automotive serviceman, and we, as an independent automotive wholesaler, both profit by doing business together.

We make it possible for you to buy, in a free market, nationally-famous, performance-proven merchandise your customers prefer. Our complete inventory of parts and supplies is always available to you. Your own inventory need not be excessive.

As an independent automotive wholesaler—member of M.E.W.A.—we also make available to you the latest technical know-how and equipment so you can give the kind of service that keeps your customers coming back.

We provide Seven Steps to Servicing Success to help your business grow. Read them carefully. Take advantage of them.

Let's do Business Together!

© 1946

YOUR
WHOLESALE
MEWA

MOTOR AND EQUIPMENT WHOLESALE ASSOCIATION
1111 N. JACKSON BOULEVARD, CHICAGO 4, ILLINOIS



7 STEPS to Servicing Success

Your MEWA Wholesaler provides:

1. Parts, equipment and supplies you want when you want 'em
2. Precision machine shop service
3. Terms to fit your needs
4. Deliveries to speed your service
5. Freedom of choice of famous brands
6. Prestige of national brands free from tie-in agreements
7. Experienced business, merchandising and mechanical know-how



"Never mind the 'AH!' Just open wide."

The PRECISION LATHE ..for Armatures..

TRUCUT
Armature Lathe & Undercutter

THE TRUCUT Armature Lathe is in daily service in thousands of garages and shops that feature precision workmanship, and recognize the profit possibilities in speedy, precision tools.

The TRUCUT Armature Lathe, built especially for Armature work, does a perfect job of machining and under-cutting commutators, quickly and easily.

The TRUCUT weighs only 55 lbs. and does a fine precision job, without expensive extra attachments. Occupies little bench space, only 14 x 19 inches, and is readily moved from place to place. Eliminates the necessity of using up valuable shop space with unwieldy, space consuming equipment for truing armatures.



Sold only through jobbers by

FRANK N. WOOD CO.

TRUCUT
Armature Lathe & Undercutter

342 W. MAIN STREET • WAUKESHA, WIS., U. S. A.

PACIFIC COAST ADDRESS: 1340 S. FLOWER ST.
LOS ANGELES 15, CALIF.

Also
TRUCUT Tailstock Rest
and
Armature Tester



CANADIAN REPRESENTATIVE: W. H. COOPER & CO.
1103 YONGE ST. TORONTO 5, ONTARIO, CANADA

Black Market Prices

(Continued from page 68)

mium and peddles the auto to a man who is not willing to wait for his name to hit the top of a list. The dealers deplore their present inability to check up on every car purchaser, but when they can check duplicate purchases, the flow of new cars to the used car lots will stop.

An equally reputable representa-

tive of the used car fraternity told us that we had been given the wrong steer. Individual sales, he emphasized, could not bring 20 cars into the same lot at the same time. The number alone shows the working, he declared, of a business unit. Then he gave us his version.

A used car dealer goes to the dealer from whom he has been purchasing used cars. The dealer says, "You've had pretty tough sledding under OPA, and you did well by me. Now I'll give you a break. I'll

deliver to you three of my new Spitz specials that I sell for \$1,775. I'll let you have them for only \$2,500. Apiece." And according to my informant, since the used car man cannot live without the support of his patron, he has no alternative but to take the cars. When he gets them on the line, he has to add a few dollars to cover operating expenses. You can readily see who makes the money, he summed up, the used car dealer or the new car dealer.

It was possible that a distributor whom we know could shed some light on the source of supply, but he could only say, "That never happened in my district." And when offered proof positive, "They must be out of state cars." It is perhaps not out of place to mention here that everyone approached agreed on the one statement that 99 per cent of the cars are "from out of state."

Around Philadelphia, where conditions are relatively bad, several organizations are cooperating to clean them up.

Bill Phillips, spokesman of the Philadelphia Automobile Trade Association, said that the new car dealers have set up a clearing house where all new car transactions can be checked against waiting lists, thus preventing duplicate purchases by unscrupulous individuals.

Factory representatives are in-
(Continued on page 72)

A "MUST" FOR ALL SHOPS



Pocket-size vise is also holder for extra blades. Easy to assemble and use.

VOLTAGE REGULATOR FILE

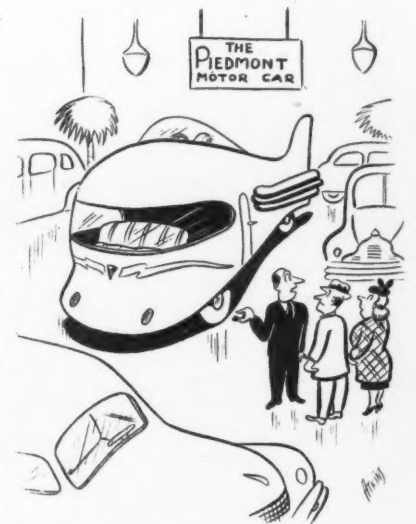
This newly designed Voltage Regulator File (Model 333) comes complete with sturdy, nickel-plated pin vise and three double-cut, fine file blades for cleaning oxidation from points. The files are narrow enough for easy access to regulator points and rugged enough for shop handling. Two handy extra blades, clean and ready for instant use, will save time on the job.

See our new line — ASI Show — Booths A807-A809

LANAGAN and HOKE

Philadelphia 44, Pa.

Precision Automotive
Testing Equipment



"One of our factories made a typographical error—it's the 2046 model."

LO-EX* PISTONS

ARE SELLING LIKE...

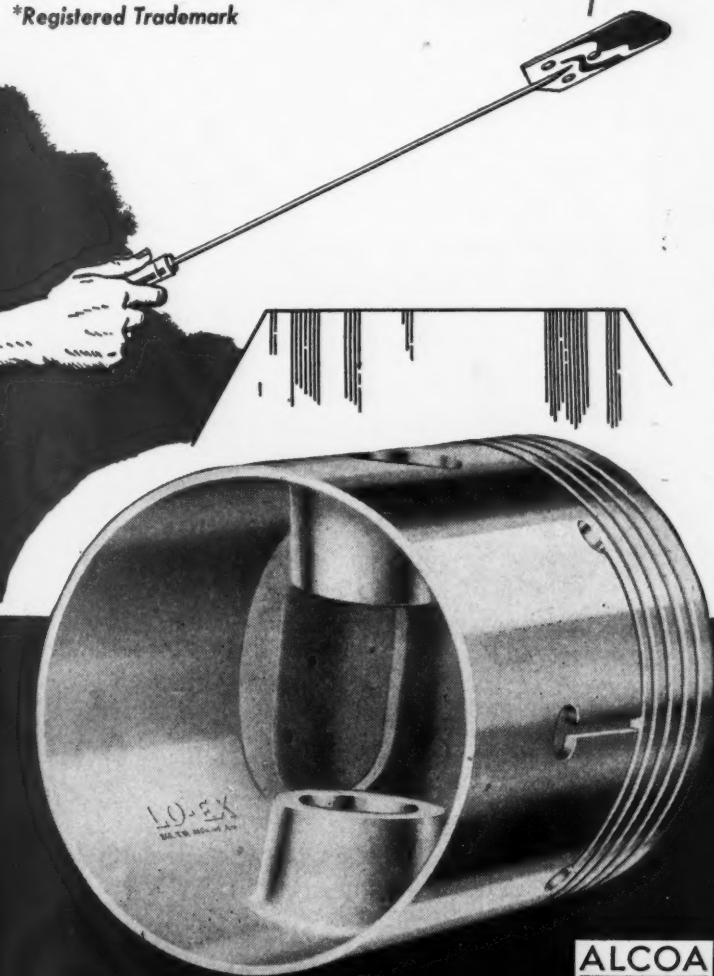
That's right . . . hot cakes! Here are the reasons:

Their aluminum lightness lowers bearing pressures. Their high strength withstands high compression loads. Heat doesn't pile up—no hot spots to cause trouble. Alcoa Aluminum Piston Castings are sound. Low expansion of the Alcoa Piston Alloy permits close clearances—better performance.

*Registered Trademark



ALUMINUM COMPANY OF AMERICA
2133 Gulf Building, Pittsburgh 19, Pa.



LO-EX

REGISTERED TRADEMARK

PISTONS OF

ALCOA ALUMINUM



Black Market Prices

(Continued from page 70)

investigating leaks in their outlets, and loss of franchise is swift and certain punishment for the malefactors, all factories agree. As Phillips pointed out, a franchise is today "a golden goose in our trade."

Milton Stein, secretary of the Used Car Dealers Association, declared that his organization has a

code of trade ethics which as a body it intends to keep. "A minority group," he said, "are price gouging badly." But he pointed out how little pressure his organization can actually bring on one of these racketeers. The only effective way to stop them, he believes, is to pinch off the source of supply. His organization is furthermore cooperating with finance companies to prevent potential buyers from borrowing money to purchase over-

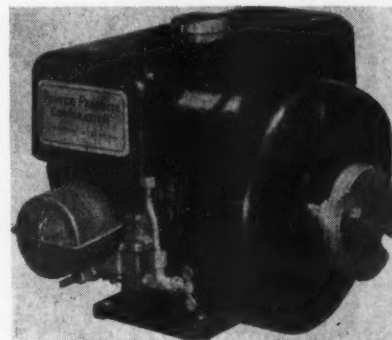
priced cars. This move leaves only the "30 per center" type of loan shark as a source for financing these transactions.

All of these steps are in the right direction. All of them help to make life hard for the gyp dealer in Philadelphia, and wherever else they are put into practice, but the problem is not licked yet.

Light-weight Gasoline Engine Made of Aluminum

Weighing but 16 lb., yet delivering $\frac{3}{4}$ to 1 hp., a new light-weight aluminum gasoline engine has been produced by the Power Products Corp., of Grafton, Wis.

Of single cylinder design, the



new engine is a two-cycle, air-cooled, all-aluminum type, weighing less than half the usual amount for engines of comparable horsepower. It is applicable to compressors, pumps, sprayers, lawn mowers, etc.

TWO JOBS A MONTH PAY FOR THESE MACHINES AND FURNISH A PROFIT

Only two jobs a month are needed to more than pay for either of these Lempco Line Boring Machines. But in addition to direct profit, you'll get extra dividends from cylinder reboring, pin fitting, piston and rings, valve refacing and other parts and services.

Adaptability, ease of operation and simple set-up make the Lempco Model G.E. the finest machine of its kind on the market. Full floating construction assures perfect alignment, even when crankcase is badly warped. Camshaft bearings can be bored with same set-up as main bearings. The Lempco Universal Line Boring Machine can be used to service all trucks, buses and passenger cars. It can be driven by hand or power.



The Lempco FSU Line Boring machine is fast, strong and accurate. It's an ideal machine for production work on Ford A, B, V-8, Plymouth and Chevrolet Six. The FSU has one piece frame construction. This makes it easy to change set-ups in just a few minutes time. This machine can be either hand or power driven.

For complete details on how these machines can be used to your greatest advantage, write for free booklet "Lempco Line Boring Machines for Precision Alignment."

LEMPCO

5727 Dunham Road • Bedford, Ohio



"I want the names and addresses of the people who are going to get rich this year."



Jim Mason, Dodge Dealer, Ferndale, Michigan

"I've been a Dodge dealer for fifteen years. I grew up in the business from assistant book-keeper to major owner. I've seen a lot of things come and go in the automobile business, but I have yet to see anything like the Dodge Dealer proposition. It's a single contract embracing three of the finest vehicles and affording a sales and service market second to none. To anybody

interested in the automobile business I'd simply say,—get a Dodge dealership if you can, and get it *anywhere* you can."

• • •

DODGE • PLYMOUTH • DODGE "Job-Rated" TRUCKS

DODGE—DIVISION OF CHRYSLER CORPORATION
7900 JOS. CAMPAU, DETROIT 11, MICH.

Auto Dealer Sells Planes

(Continued from page 37)

motive salesroom. In fact with automobiles as hard to get as they are, the plane often is the only display item on the floor. It attracts a great deal of attention and is of considerable advertising value. The actual selling of aircraft is, of course, somewhat different from that of selling cars. Being a retail outlet working under a distribu-

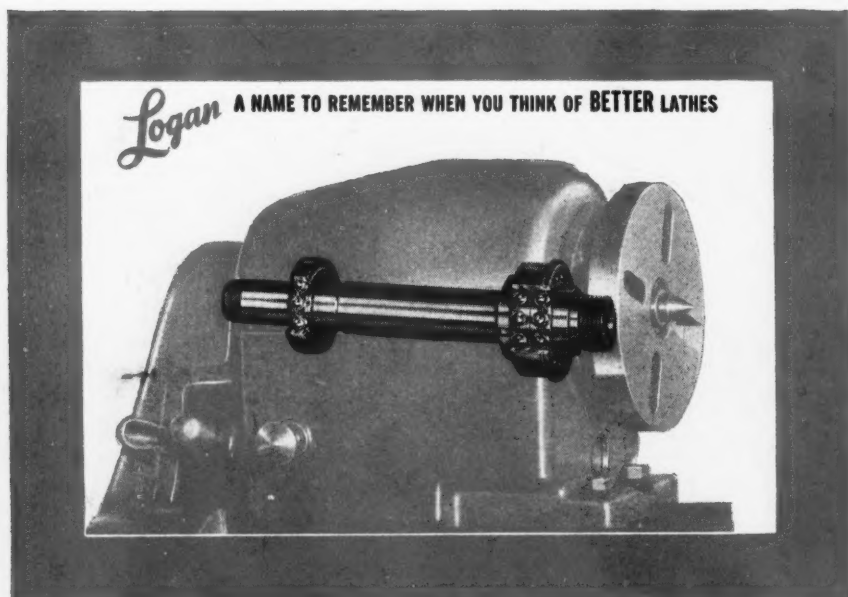
tor, Browne works with the distributor, who has facilities at the Cleveland airport, for demonstrations and on service. In most cases the prospects are flyers who are already familiar with the features of the Aeronca and as a result not a great deal of intensive selling is required. He believes that for an automobile dealer to be successful

in the personal plane field, he should be able to talk the customer's language, so in 1940, when he visualized the merchandising possibilities, he took up flying. He now holds a private license, and has his own plane. In addition, he has hired a returned veteran flyer as salesman.

The basic principles of selling personal planes are not greatly different from those required to sell cars, Browne says, and his experience in selling more than 8000 automobiles is a great asset. During the past several years, he has built up a large personal acquaintanceship in the community and in the transportation field, and his interest in personal flying is well known. As a dealer, he also is well grounded in the importance of service to the customer. He believes that the combination of personal selling and knowledge of good customer relations which has long characterized automotive selling makes the automobile dealer the logical outlet for retailing the personal airplane.

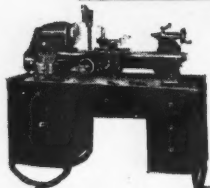
The actual mechanics of handling a deal for a personal plane are, of course, different from that required for an automobile because of the nature of the airplane. A demonstration must be given at an airport, usually in a plane provided by the distributor. The buyer has the option of either taking delivery at the factory himself, or of having it flown to the nearest airport. Maintenance service at the dealers place of business is not

(Continued on page 78)



**BALL BEARING
SPINDLE MOUNTING**

**PERMITS HIGHER CUTTING SPEEDS ...
REQUIRES NO BEARING ADJUSTMENT ...
SUSTAINS ACCURACY OF LOGAN LATHES**



Quick Change Gear Cabinet Lathe

SPECIFICATIONS COMMON TO ALL LOGAN LATHES ... swing over bed, 10 1/2" ... bed length, 43 1/2" ... size of hole through spindle, 25/32" ... spindle nose diameter and threads per inch, 1 1/2"-8 ... 12 spindle speeds, 30 to 1450 rpm ... motor, 1/2 hp, 1750 rpm ... ball bearing spindle mounting ... drum type reversing motor switch and cord ... precision ground ways, 2 V-ways, and 2 flat ways.

With its spindle turning on a pre-loaded ball bearing mounting of extreme precision, the Logan Lathe is inherently well adapted to accurate work at higher spindle speeds. This fact permits the use of high speed carbide cutting tools to full advantage. It assures a minimum of spindle deflection. And since no bearing adjustment is required within the full range of its speeds, 30 to 1450 rpm, the accurate factory alignment of the Logan Spindle remains undisturbed, and original accuracy is sustained. Grease sealed, the Logan Spindle Mounting never needs lubrication. All these characteristics are important factors in the proved ability of Logan Lathes to speed output and cut costs on production lines, and to do fast, accurate work in the tool room. See your Logan Lathe dealer, or write direct for the Logan Lathe catalog. M-2-M

LOGAN ENGINEERING CO. CHICAGO 30, ILLINOIS



"Well that's what they get for biting on Sunday."

DEPENDABLE

... throughout a long, long life



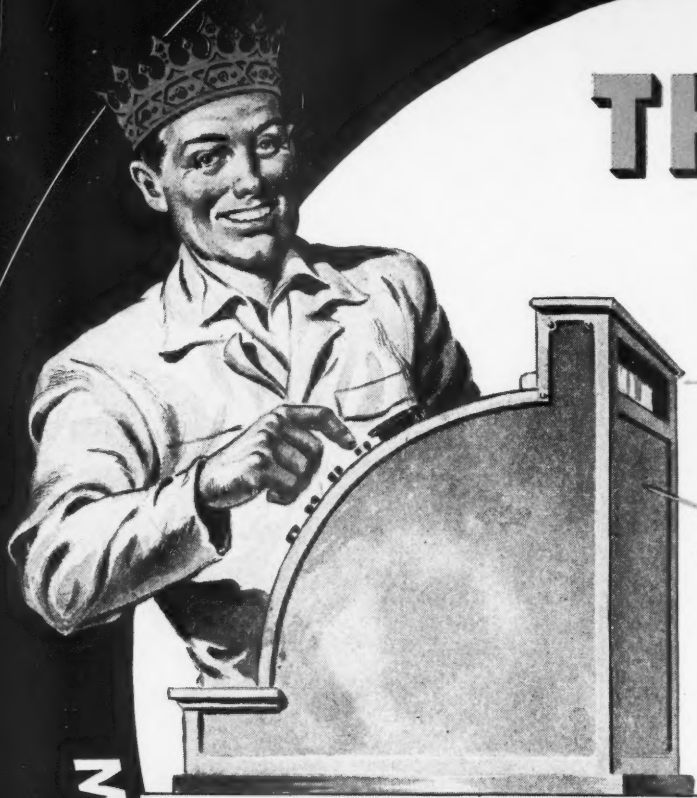
WILLARD BATTERIES—Automobile • Truck and Bus • Radio • Motorcycle • Tractor Aircraft • Marine • Diesel • Stationary
Sold and serviced by Willard Dealers everywhere.

Willard

"SAFETY-FILL"
BATTERIES

Dependability • Performance • Long Life

WILLARD STORAGE BATTERY CO. • CLEVELAND • LOS ANGELES • DALLAS • TORONTO



THERE'S MORE PROFIT IN THE KING LINE!

The King Ring Line—Engineered Sets, Rebore-Rebuild Sets and Service Special Sets...the right ring for every job, for every make and model of motor.

MORE PROFIT IN THE RING LINE



Engineered Set Piston Rings for Re-Ringing.

Rebore-Rebuild Expander Piston Rings with Iron Expander Rings.

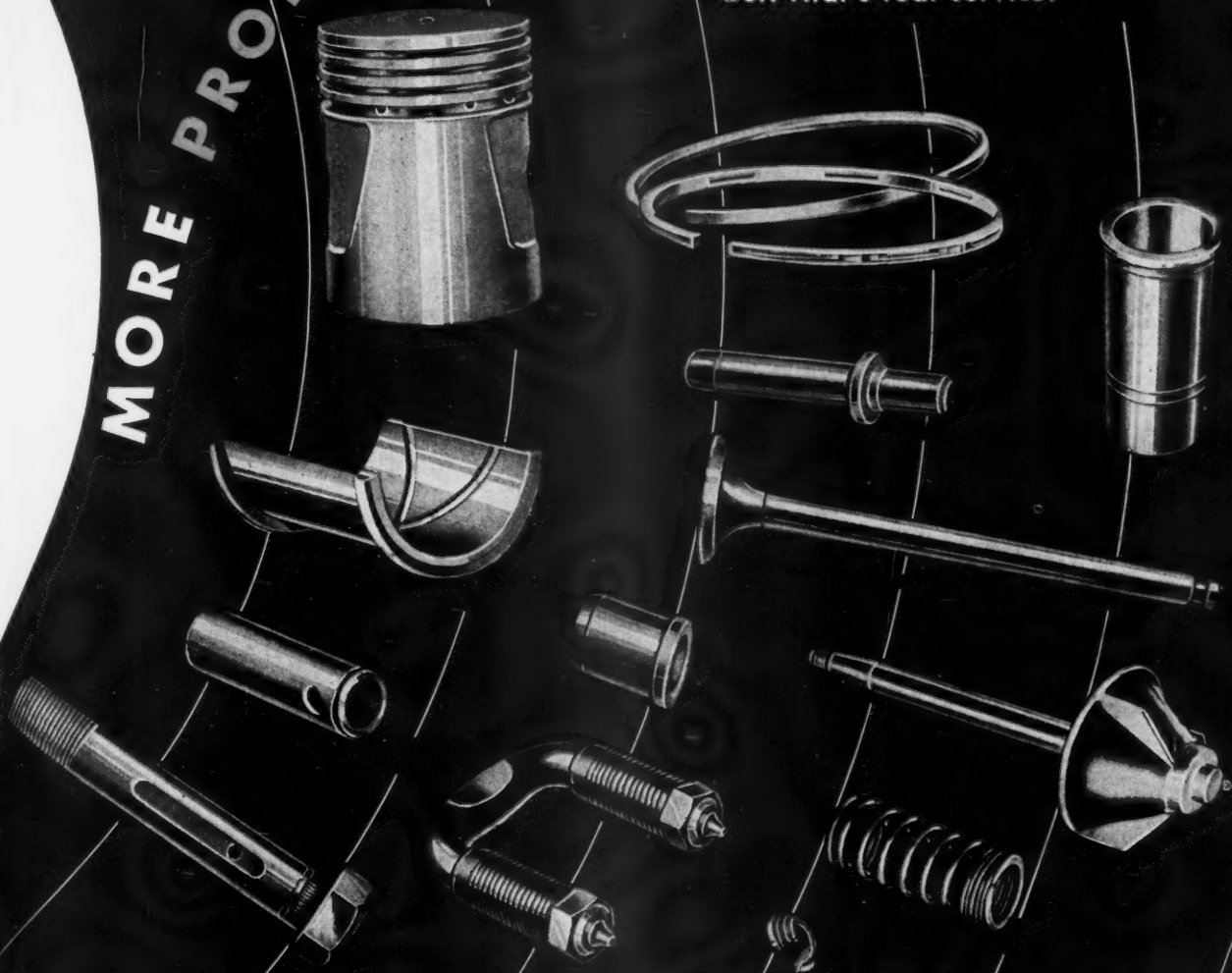


Service Special Piston Rings with Steel Expanders for Dealers' Service Department.

MORE PROFIT IN THE

COMPLETE LINE

The complete King Line includes
Pistons, Pins, Motor Bearings, Valves,
Cylinder Sleeves, Water Pumps and
Parts, Front End Parts and Shackles
...all in one catalog from one job-
ber. That's real service!



KING QUALITY

"Building for the future on a 26 year record"

ST. LOUIS 10, MO., U.S.A.

PISTON RINGS • PISTONS • PINS • VALVES

BOLTS • BUSHINGS • SILENT-U SHACKLES



BEARINGS • WATER PUMP PARTS

SLEEVES • WHEEL SUSPENSION PARTS

Dealer Sells Planes

(Continued from page 74)

possible, so he must set up shop at the airport, if he wants to go into service, or what is more common, the distributor maintains service facilities.

Trade-ins also are not as yet much of a problem in the personal plane business. Browne has not taken in any thus far, but if the need arises he probably would do

so. Here again he would fall back on the distributor for help in making a fair appraisal of value. In fact, the distributor has a most important place in personal plane sales organizations, because he can provide at the airport services and functions which retail dealers individually cannot supply.

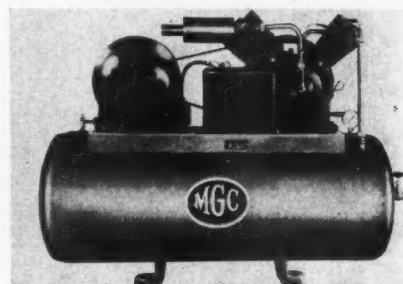
Finance companies also are aware of the possibilities in the personal aircraft field. Universal C.I.T. Credit Corporation already

has available a financing plan for installment sales. It includes flight, crash, and ground risk insurance at 10 per cent of the total cash selling price of the new plane, and a finance charge of five per cent on the unpaid balance.

Hobart Heavy Duty Air Compressor

Five new models of heavy-duty two-stage air compressors are being marketed by Motor Generator Corp., a division of the Hobart Brothers Co., of Troy, Ohio.

The manufacturer declares that these compressors are fully automatic. They are controlled by centrifugal type unloading valves to



prevent motor burn-out. In addition, a fan type flywheel cools the air as it passes from the low pressure cylinder to the high pressure cylinder, thus minimizing the collection of carbon in the valves. The compressors will be available in 7, 9, 13 and 21-ft. capacities and all are furnished with 80-gal. storage tanks.

Good News about QUALITY Spreads Fast!

SI-EN-TIF-IK MOTOR RECONDITIONER

Prepared by Scientists
Proved by tests

Yes sir, when a product does the outstanding job in motors that SI-EN-TIF-IK Motor Reconditioner does, the news is bound to get around. SI-EN-TIF-IK has a fine reputation for its work in cars, trucks, diesels and tractors all over the country. Everyone is talking about SI-EN-TIF-IK's new approach to the problem of carbon, sludge and motor varnish—about the speed and ease with which it eliminates these troubles—about the way it gives old motors new life, new power, new smoothness—about the safe and gentle way it breaks in new motors! There's a long profit margin and steady repeats that means good business for you—when you talk about SI-EN-TIF-IK.

DISTRIBUTORS: Some territories are still open for this rapidly expanding line—including Motor Reconditioner, Penetrating Oil, Brake Fluid, Metal Polish, "Fire Power", "Dynamix" and others. Write for additional information.



SI-EN-TIF-IK Quality products are sold on a money-back guarantee

SI-EN-TIF-IK PRODUCTS CO., INC.

2301 So. LaSalle Street • Chicago 16, Ill.



"You have the ransom? Well, he's won \$30,000 of it back."

LET'S GO, SMALL FRY.
I'M FULL OF FIGHT!

ME, TOO, BIG BOY.
WE'RE PERMITE RIGHT!

REVITALIZE
CARS AND TRUCKS
with

PERMITE PARTS

Now, more than ever, aging cars and trucks require the dependable high quality of Permitem Replacement Parts — parts **engineered** to restore smooth operation and enduring efficiency for the tougher going of times like these.

When you install Permitem Valves, Pistons and other Permitem Replacements you install parts well proved under the most fatiguing and destructive conditions of battle — in jeeps, tanks, trucks and planes. But more . . .

In Permitem Parts you provide your customers with the

advanced results of war-born techniques in metals refining, in skilled engineering and quality control — results exceeding the highest pre-war standards. You give them all the modern values developed by a foremost organization of automotive parts specialists.

Revitalize your customers' cars and trucks for many more miles of dependable operation. Install Permitem Parts. Your Jobber has the complete line.

ALUMINUM INDUSTRIES, Inc.
CINCINNATI 25, OHIO



PERMITE

R E P L A C E M E N T P A R T S

PISTONS
PISTON PINS
VALVES

VALVE GUIDES
VALVE STEM KEYS
VALVE SPRINGS

BOLT SETS
TIE-ROD ENDS
BUSHINGS

WATER PUMPS
WATER PUMP
REPAIR KITS

MUFFLERS AND
CLAMPS
TAIL PIPES

CYLINDER SLEEVES
WET SLEEVE
ASSEMBLIES

Sell Chains For Safety

(Continued from page 41)

and winter driving especially in regard to stopping power. The driver may point out that this performance is based on the use of premium chains on both front and rear. To use brakes on the rear wheels alone, however, is to ignore nearly twenty years of automobile progress. When cars had two wheel brakes it was obviously pointless to

put chains on the front wheels. In modern cars, however, from ten to twenty per cent more braking pressure is exerted on the front wheels than on the rear. Consequently, for quicker stopping and for less swerving when brakes are applied, chains on the front wheels are necessary unless the owner is willing to cancel out his front brakes

and, in effect, return to two wheel brake operation.

Some drivers have but little idea of what takes place when rear wheels start to spin and the grease, too cold to flow, cannot lubricate the gears and bearings. Then even snowless starts put an overload on the rear end. Let there be a few feet of snow, and the chainless rear wheels are spun and the car "rocked" until the driver gets moving or gives up. The result may well be a large repair bill to cover the replacement of the pinion and ring gear and differential gears which did not stand up under the strain of spinning wheels while the housing was immersed in snow. Tire damage should and can be prevented by proper chain installation. Spinning the wheels to get traction wears down tire tread just as surely (and almost as quickly) as if the tire were held against a grinding wheel. Finally, unable to get going, the driver may get a push from another car. Result: a fender straightening job, a smashed bumper, or a jammed trunk door on his own car, perhaps a smashed radiator grille on the other fellow's.

Whether it's a ruined rear end, ground-down tires, or damaged body work, it all adds up to big bills and a laid-up car. Again, chains would have prevented loss of time and money.

Recent research has revealed

(Continued on page 82)



"Boy, he's taking a chance—driving in weather like this with no chains."

"Yep, if he skids on that road, it's good-bye Joe."

SAFETY SAM SAYS:

Don't let your customers risk their lives on slick streets; Pyrene Chains give safety, traction.



Your customers are your friends; you want them to have the best skid protection possible. Icy streets and muddy roads spell chance, danger, accidents... unless stopping distance can be reduced. Pyrene Chains reduce skidding almost 50% on glazed ice.* Your customers are safer with Pyrene Chains; they furnish traction on the slickest surfaces. Easy-On Easy-Off lock makes installation and removal speedier. Pyrene Doubleduty Bar-Reinforced Chains give your customers more miles of service. New-design V cross bars give straighter, safer and quicker stops. Better traction at slightly higher cost. See your jobber or write us today and find out how you can make money on tire chain sales and service. *In a test by the National Safety Council, at 20 m.p.h. 169 feet were required to stop on glare ice; with chains only 88 feet were required.

PYRENE MANUFACTURING COMPANY

NEWARK 8, NEW JERSEY

Makers of Pyrene Fire Extinguishers

AFFILIATED WITH C-O-TWO FIRE EQUIPMENT COMPANY

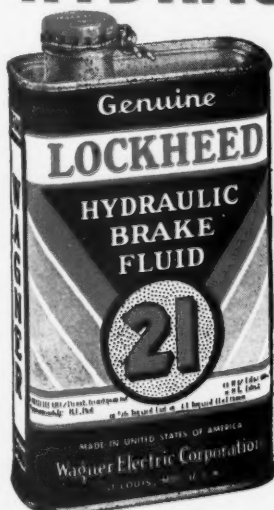


"I am Scout Millsbee, sir. May I be of any assistance?"

Get these POINT-OF-SALE SIGNS--free!



It pays to remind your customers that you stock WAGNER LOCKHEED HYDRAULIC BRAKE PARTS and FLUID



The attractive Wagner Lockheed signs, shown above in miniature, can help you get a larger share of the brake service work.

By displaying these red, white and blue signs on your walls, in your windows, on your pumps and other point-of-sale places, you identify yourself as THE establishment in your community for hydraulic brake service. These signs cost you nothing, and they will help you get the benefit of the advertising Wagner has placed in the Saturday Evening Post and in Collier's for the past nine years.

Put the HU-208 flange sign on the corner of your building, the HU-212 oval

sign in your window, the HU-217 tacker sign near the door, and the HU-29 decal on your gas pump. Act NOW—and cash in on Wagner's efforts in your behalf.

And when brake fluid is needed—remember, Wagner Lockheed No. 21 is an all-weather year-round fluid for ALL hydraulic brake systems. Sold by leading jobbers everywhere.

Clip and Mail Coupon Today!

Wagner Electric Corporation

6498 Plymouth Avenue • St. Louis 14, Missouri

Please send us, at no cost, the following:

- ☐ Flange Sign HU-208 ☐ Tacker Sign HU-217
☐ Oval Sign HU-212 ☐ Decal HU-29
 Send booklet HU-17 on bleeding and refilling brake systems.

NAME _____
 COMPANY _____
 ADDRESS _____
 CITY _____ ZONE _____ STATE _____

H49-28

Wagner
 LOCKHEED HYDRAULIC BRAKE
 PARTS and FLUID ... CoMaX
 BRAKE LINING ... AIR BRAKES



Electric
 NoRoL ... TACHOGRAPHS ...
 ELECTRIC MOTORS ... TRANS-
 FORMERS ... INDUSTRIAL BRAKES

Remind your customers "BRAKE FLUID SHOULD BE CHECKED TWICE A YEAR."

Chains For Safety

(Continued from page 80)

some data on winter driving in general that should be of interest to the driver who wants to get maximum performance and economy out of his car. When he comes in to have his cooling system filled with anti-freeze might be a good time to check over the main points of winter operation with him and

to show him where chains fit into the picture.

The National Safety Council found in addition to the stopping distances previously quoted, that temperatures near freezing are more dangerous than zero temperatures when driving on ice. Wet ice is more slippery than "dry" ice.

Pumping brakes and shifting in to lower gear ratios are better than locking brakes on ice. Steady brake

pressure tends to lock the wheels, producing a sled-like action.

Natural rubber tires are superior to synthetics in stopping and accelerating on ice, especially on "wet" ice.

Chains aid acceleration ice and permit some increase in speed without side skidding on curves.

GOOD NEWS!

**THE WILSON "BUSYBEE" NOW READY
AND SOON AVAILABLE IN QUANTITY**

130 amp. . . . \$146.00* (illust.) 20½" x 12" wide x 17" deep
180 amp. . . . \$166.00*



... A New A. C. Welder—AT LOW COST!

Here it is! An A.C. Welder designed for garages and repair shops operating on rural power lines. Light, well-balanced, rugged, it includes all the improvements and engineering features found in other Wilson welders.

Available in two sizes; 130 amp. and 180 amp., the "Busybee" is easy to operate, low in cost, and can be moved from job to job with ease. It is furnished complete with all accessories — just plug it in, and it's ready to start.

Your nearest Airco sales office or dealer can give you full information about the new "Busybee" — or write Dept. 77-1, Air Reduction, 60 E. 42nd St., New York 17, N. Y. In Texas: Magnolia Airco Gas Products Co., Houston 1, Texas. Ask for Bulletin ADW-77.

WILSON "BUSYBEE"
The NEW A.C. Arc Welder
with the penetrating, stinging arc

EASY TO USE:
Built-in gauge permits positive selection of electrodes.

Only one adjustment — full-view indicator, calibrated in electrode sizes instead of amperes, permits immediate current adjustment.

SAFE TO USE:
Low open-circuit voltage.
Thoroughly insulated with fireproof spunglass.

MEET THESE SPECIFICATIONS:
NEMA rated for limited input welders.
REA specifications for rural power lines.
Approved by Underwriters Laboratories, Inc.

READY TO OPERATE:
Furnished complete, even to face shield, gloves, and 5 lbs. of selected electrodes.

*Prices shown without capacitors. With capacitors, \$156 (130 amp.) and \$182 (180 amp.). Capacitors may be used where necessary; generally not required.



AIR REDUCTION

Offices in All Principal Cities
Plus a Nationwide Dealer Organization

Carbon Arc Torch For General Work

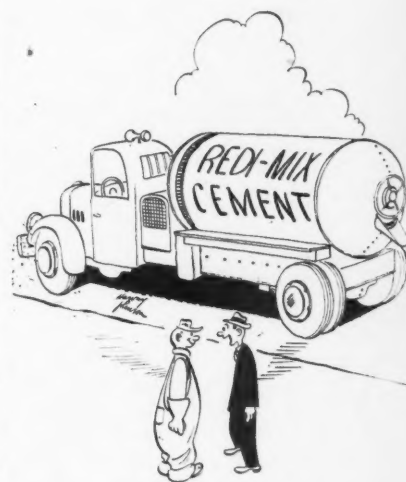
Cesco Products, Inc., of Chicago, announces the Lite-ning Arc Torch, an AC-DC torch designed for jobs formerly requiring gas welders. The carbon arc flame, with no pressure blow or oxides, makes possible welding of aluminum and ferrous and non-ferrous metals, as well as brazing, soldering, preheating and hard-surfacing without danger of burn throughs.

Lite-ning Arc Torch is available in two models, to take ¼-in. or ⅜-in. carbons.

Small Parts Retriever

The Flex-O-Claw, made by the Angelus Tool Mfg. Co., of Los Angeles, is made to install and retrieve small parts, nuts, screws, bolts and so forth in otherwise inaccessible places.

Of cadmium-plated steel wire, Flex-O-Claw is ¼-in. in diameter, and comes in 12, 15, 18 and 22-in. lengths.



"We want you and your truck at the
Cement Mixers' Ball—to mix drinks."

If he can't see in time...
he can't stop in time!

Make night driving SAFER...
sell G-E Sealed Beam Lamps

THEY DO NOT GROW DIM

What happens if headlamps grow dim? . . . Seeing distance is cut. The driver may not see danger until it's too late to avoid an accident. He's lost the safety margin of "new-car" headlighting . . . This night driving hazard is eliminated by G-E Sealed Beam Headlamps, because *they do not grow dim!*

Want the proof? Actual road tests show that the average G-E Sealed Beam Lamp maintains 99% of its original light output right up to the end of lamp life. Remember—you're selling safety when you install G-E—the lamp that DOES NOT GROW DIM!

FOR SAFETY AT NIGHT—AIM HEADLIGHTS RIGHT!

"ALL-GLASS" SEALED BEAM
G-E LAMPS
GENERAL  ELECTRIC



All glass, hermetically sealed construction makes it impossible for moisture, air or dirt to get into General Electric Sealed Beam Lamps.

Sales Resistance Plus

(Continued from page 45)

what counties are called in Louisiana) are scores of buggies rolling along to early morning mass in the rural churches. We counted more than 50 buggies parked around one rural church in St. Landry Parish. During a drive from Lafayette to Opelousas, we counted 37 on the main highway.

This may be the golden jubilee

of the horseless buggy, but down here the horse still has the laugh on his mechanical competitor.

Kermit Ducote, county agent of Avoyelles Parish and a good-natured, chuckling Mr. Five by Five, scratched his head and laughed when we asked him why people still drive buggies.

"Far as I know," he said in his

French-accented speech, "it's because people driving buggies are perfectly satisfied with them." Warming up, he continued, "Folks around here haven't far to travel. Usually they go to church and country stores not more than six or seven miles from their home. The majority using buggies could afford to buy automobiles, but it would take a mighty convincing salesman to sell one to them."

Mr. Ducote's opinion wasn't shared by S. J. Bowles, another county agent who is stationed at Lafayette.

"Lots of these horse-and-buggy drivers would get automobiles if they could afford to buy them, he stated. "For the most part, however, these buggies — and there's around a thousand buggies in my parish—are owned by small tenant farmers whose income are not large enough to permit buying cars.

"Of course," he added reflectively, "many of them refuse to buy automobiles because they feel they are an extravagance.

"Others," he continued, "keep driving horses because that's the way their fathers and grandfathers got around the country. In rare cases, dirt roads that get too muddy in wet weather cause farmers to prefer a buggy to an automobile."

The average buggy costs from \$150 to \$175. One of the biggest manufacturers of buggies shipped more vehicles to the prairies of Louisiana than anywhere else in the country, according to government figures.

(Continued on page 86)



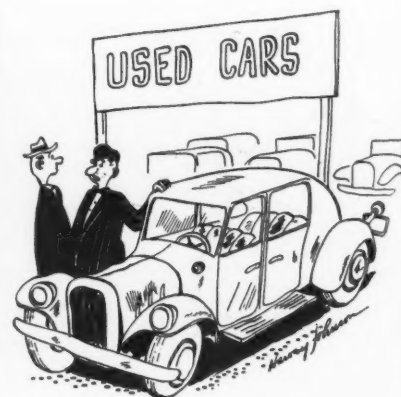
MARVEL MYSTERY OIL for WINTER MOTORS!

Here are the bare facts on live starting in dead of winter: Add Marvel Mystery Oil to every motor—in crankcase oil, gearing grease, and gasoline. It pays to give your customers this service.

Marvel combines amazing low freezing point with extra high film strength. It pours at 70° below zero!—makes oil and grease stay fluid to form wear-resistant coatings, even in severest cold. That's the trick to starting quick!

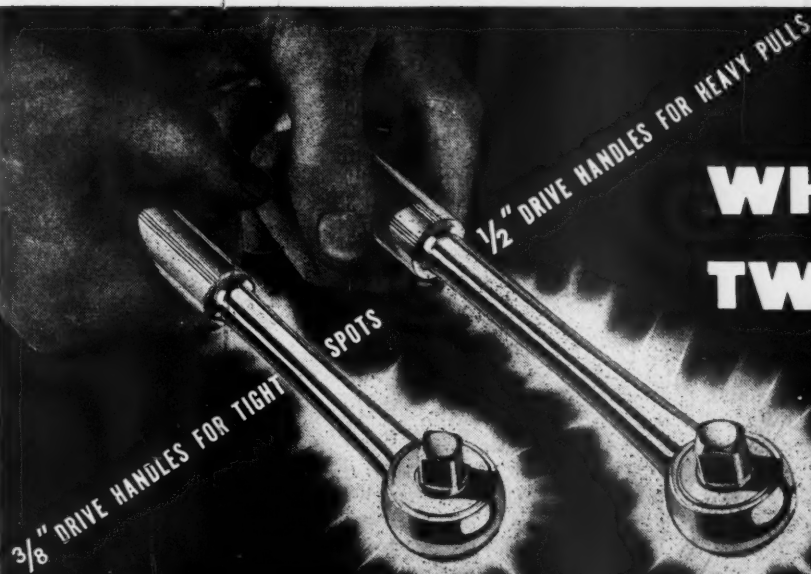
Besides, detergent Marvel scours the motor clean. And, it resists heat—protects sizzling valves and upper motor parts. Introduce your customers to good habit-forming Marvel. There's cool profit to warm your pocketbook, year 'round. See your Jobber TODAY! Emerol Manufacturing Co., Inc., 242 W. 69th St., New York 23, N.Y.

MARVEL MYSTERY OIL



"Now this car has had only one owner . . . the Whizzer Taxi Company."

WHY HANDLE TWO HANDLES-



NUGGET
7/16" DOUBLE-DUTY DRIVE FOR
TIGHT SPOTS AND HEAVY PULLS

WHEN ONE DOES THE JOB?



TO PRESENT NUGGET OWNERS: If you have lost any of your prewar NUGGET Wrenches, see your Blackhawk Jobber. He will arrange immediately delivery of replacements.

...

TO NEW BUYERS: Hexite Steel will soon return and NUGGETS will be back on the market to stay. Tell your Blackhawk Jobber that you want one of the first sets available.

YOU know, of course, that many of the handle types, socket sizes, and attachments are duplicated in the $\frac{1}{2}$ " and $\frac{3}{8}$ " drives. This is costly and inconvenient for mechanics who today must buy both $\frac{1}{2}$ " and $\frac{3}{8}$ " wrenches to do the complete range of work required. But — the return of Blackhawk NUGGET Socket Wrenches will abolish this unnecessary duplication of wrenches and expense. Why? Because NUGGET handles, sockets, and attachments in the 7/16" Double-Duty Drive do all the work of both $\frac{1}{2}$ " and $\frac{3}{8}$ " drives. That means a saving on original cost and continuous savings on replacements.

Blackhawk won its reputation with the high quality of its wrench line, including $\frac{3}{8}$ " and $\frac{1}{2}$ " drives. Consequently, we judge this future development in the light of past and present wrench design. We urge you to wait for Double-Duty NUGGETS.

A Product of BLACKHAWK MFG. CO., Dept. W6126, Milwaukee 1, Wisconsin

BLACKHAWK

NUGGET



7/16" Drive Wrenches



3/8" Drive Wrenches



1/2" Drive Wrenches

Don't Buy Two Sets When ONE Will Do The Job!

*Reg. U. S. Pat. Office

SOCKET WRENCHES

Sales Resistance Plus

(Continued from page 84)

And there's plenty of sales resistance in the Pennsylvania Dutch sections of Pennsylvania and Virginia. Although it may be a mechanized world, the bearded, religious Amish people still cling to their horsepower.

Horses and mules are still numerous in such places as Lancaster County in Pennsylvania and Rock-

ingham and Augusta counties in northwestern Virginia. Probably the best available report on horse and buggy transportation among the Old Order Amish of Lancaster County was written by Walter M. Kollmorgen who write:

"The Old Order Amish do not own automobiles and do not use tractors for field work. Heavy horses and mules are used for field work and lighter horses are kept for traveling on the road. Excepting the cropper group, 96 per cent

of the Old Order Amish farmers of Leacock Township reported owning horses in 1930 and the average number of animals reported was 3.24. Also, 54 per cent of the non-cropper farmers reported an average of 2.55 mules per farm."

The Amishman uses either an open buggy before he gets married or a gray-topped buggy for transportation after his marriage. The regulations forbid anything fancy in the way of decorations or accessories—the buggies must be alike in color and construction and must not have dashboards and whip-sockets.

Strangely enough, there is no injunction against hiring a truck to haul produce. For that reason, commercial trucking is a profitable business in Lancaster County. In some of the Virginia counties inhabited largely by people who moved down from Lancaster and adjoining Pennsylvania counties, farm people go to town in trailers pulled by rubber-tired tractors rather than run counter to religious scruples against use of cars.

With this kind of a setup, who can blame an automobile dealer in "Pennsylvania Dutch" or "Cajun" country from believing he has two strikes against him right at the start when cars become more plentiful in 1947.

Wimille Announced

(Continued from page 66)

A very large Plexiglas windshield, rounding into the roof and rearward at the sides, provides exceptional visibility for the driver, who is seated forward of the door posts. He has almost direct vertical vision. How heat and glare from the sun are counteracted in this arrangement is not indicated. Behind the driver a bulkhead separates the passenger and engine compartments. As the height of the engine is low, there is a platform for baggage, accessible either from the interior or by opening the rear hood, which has been made very large, somewhat at the expense of the car's otherwise highly aerodynamic profile.

No performance figures and no price have as yet been announced.

PICTURE THE PROFITS
From These UNITED Service Parts!

BRAKE CABLES & HYDRAULIC PARTS

FUEL PUMP PARTS

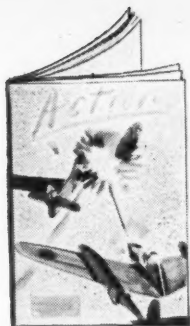
SPEEDOMETER CABLES

For profitable hydraulic brake service: United Kits... Master Cylinder Kits with Pistons... a complete line of individual parts... and famous FLEXITE cables to fit all cars. For profitable Fuel Pump service: United's Diaphragm or Pump Repair Kits for all cars and trucks. For profitable Speedometer service: United's "Necessary Nine" universal assemblies handle 95% of all jobs. Call your nearest NAPA Jobber.

UNITED

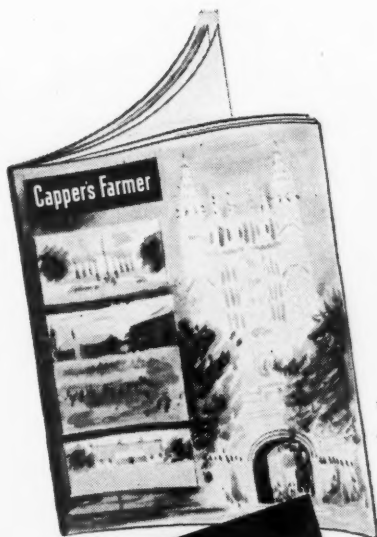
UNITED PARTS MFG. CO.

1250 W. VAN BUREN STREET CHICAGO 7
HYDRAULIC BRAKE PARTS BRAKE CABLES
SPEEDOMETER CABLES FUEL PUMP PARTS



THIS WAY TO
ADVENTURE

THIS WAY TO
ROMANCE



THIS WAY TO
MARKET



Capper's Farmer

puts them in a **BUYING MOOD**

*This Automobile Dealer
Knows the Worth of
Capper's Farmer Readers*



Customer-wise George Boeckman, automobile dealer of Kingfisher, Kingfisher County, Oklahoma, knows that dominant farm families buy more. His high regard for Capper's Farmer readers is shared by alert dealers throughout Mid-America. After inspecting the Capper's Farmer reader list for his area, he said—

"It is evident from this list that Capper's Farmer is read by the most prosperous farm folk of this county."

It's the mood that matters. And Capper's Farmer puts its 1,300,000 prosperous farm family readers in an active mood... a let's-do-it-now mood... a buying mood. Yes, by offering the men, women and teen-agers of Mid-America's dominant farm families the practical information—farm-tested suggestions—and profitable advice they seek, Capper's Farmer exerts a potent influence on their daily buying habits.

That's why ads in Capper's Farmer have such an impact on these big-income families... an impact that dealers feel at the sales counter.

**The Farm Magazine That
Dominant Farm Families Heed**

Capper's Farmer

How to Recharge Batteries

(Continued from page 47)

checked as follows to make sure that the battery can accept without harm the high charging rate.

First, check the electrolyte gravity in all cells. If the gravity readings are uniformly low, and there is sufficient electrolyte in all cells to get a reading, it is safe to begin the quick-charge. Also, observe

the color of the electrolyte. If it is discolored with brownish sediment (sluffed-off positive plate material), it is doubtful whether the battery should be quick-charged. This brownish discoloration will settle on the tops of the negative plates, then build up and produce an internal short (Fig. 1)

as a consequence of the chemical action taking place in the battery during quick-charging. Slow-charging such a battery will not stir up the sluffed-off material quite as much.

If gravity readings are not uniform, the battery should be slow-charged inasmuch as such battery may have an internal short in the low cell. Quick-charging might cause considerable heat to develop in the shorted cell. If the cell does not gas freely at the end of the charging cycle, it has an internal defect.

A badly overcharged battery or a battery which has been allowed to stand for a considerable time in a discharged condition should not be quick-charged. The battery which has been badly overcharged can often be detected because this causes the cell covers to raise up on the positive terminal sides. This effect is produced by the swelling and buckling of the positive plates caused by the overcharging. A battery which has been badly overcharged (but not quite to the point of failure) may provide some additional life if treated with care and slow-charged, whereas if quick-charged the more violent chemical action might cause a short to quickly develop between the buckled plates.

A battery which has been allowed to stand for a period of time in a discharged condition becomes sulphated. This term refers to the crystalline lead sulphate

(Continued on page 94)

Even a one-man shop must have... a

Kleer-Flo

Kleer-Flo HI-T CARBUCSOL

Kleer-Flo HI-T DEGREASOL

CARB-U-TATOR
For carbonized parts. Shown attached to KS 30. Air-agitated.

MODEL KS 30
Electrically operated. Compound used over and over. Continuously filtered.

SAYS Practical Dan THE KLEERFLO MAN

No shop can compete in repair prices when time-consuming parts-cleaning, or slower work on dirty parts, must be figured in. The Kleer-Flo process puts parts-cleaning on an efficient basis, lets labor be applied on the profitable part of the job. Savings repay the small investment in a relatively short time.



For fast removal of carbon, varnish, gums, from carburetors, pistons, fuel pumps and like parts.

Time now to forget the "bucket and brush" method and install the Kleer-Flo process, employing skilled time for more attractive work, leaving the dirty work to 'Practical Dan's modern labor-savers and profit-builders.



Powerful, fast, penetrating. Fast-dry, safe. For general parts-cleaning.

Kleer-Flo

Practical Products Company

MANUFACTURERS OF MECHANICAL PARTS CLEANERS, CLEANING COMPOUNDS, KOOL-ANT PUMPS

2632 NICOLLET AVENUE • MINNEAPOLIS 8, MINNESOTA



"I can't sleep without a pillow."

4 Thermoid ACES!

A
♠



1. Thermoid CERTIFIED CORRECT CUSTOM-BUILT BRAKE LINING SETS

Thermoid CB Sets can be counted on to wear and wear... give safe, sure, dependable stopping performance under any driving condition. AND... each Thermoid CB Set carries a sure-fire sales clincher... the famous independent guarantee of the Pittsburgh Testing Laboratory that each Thermoid CB Set is the correct lining for the particular car it fits.

♠
A

A
♥

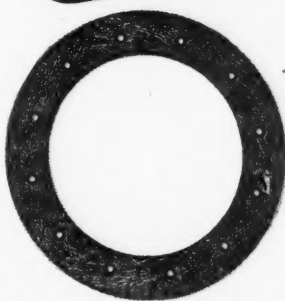


2. Thermoid Pre-Stretched THERMODIZED FAN BELTS

Most fan belts stretch, then they slip, then wear, then break. Thermoid Fan Belts are "a horse of a different color". An exclusive Pre-Stretching Process means longer life, better performance. But that's not all. A special Fan Belt Flipper makes installing a Thermoid Fan Belt as simple as replacing the cap on a gas tank.

♠
A

A
♣



3. Thermoid SS (Super-Smooth) CLUTCH FACING

Made of selected asbestos cord, the SS Clutch Facing, has been treated with a newly developed and superior friction compound for longer life. The cords are random wound until the entire facing reaches the correct dimension. This special construction, exclusive with Thermoid, means that the SS Clutch Facing gives added cushion engagement and eliminates chattering and grabbing.

♣
A



4. Thermoid CURVED RADIATOR HOSE

Custom-tailored for each car, Thermoid Curved Hose eliminates all wasteful cutting and trimming, saves shop time, frequently requires fewer clamps to hold in place. The specially treated rubber tube is virtually impervious to hot water and anti-freeze solutions. Extra heavy 3-ply wrap (plus reinforcing coil of steel wire for those cars with strong suction) absolutely guarantees against possibility of collapse.

♦
A

Thermoid

THERMOID COMPANY, TRENTON 6, N. J.

THE USER'S CHOICE



FEATURE McKAY "LUCKY LINKS" for Cross-Chain Repairs

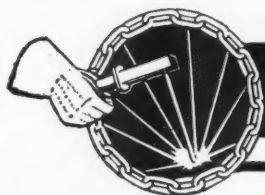


Get extra profits! McKay Emergency Repair Links, packed twelve packages to a display carton, sell on sight.

When you sell McKay Multi-Grip and Regular Tire Chains, you are selling a performance-proved line with which you are building customer satisfaction, good-will and repeat business for the coming years.

McKay Tire Chains—with their welded link construction, easy-to-put-on *Klip-Lock* fasteners, hard-to-wear-out case hardened links—give your customers longer wear, added convenience and plus protection under all driving conditions.

The standard line includes chain sizes to fit all passenger automobiles and trucks.



DISTRIBUTED THROUGH BETTER AUTOMOTIVE JOBBERS
THE MCKAY COMPANY
PITTSBURGH 22, PA.

WELDING ELECTRODES . . . COMMERCIAL CHAINS . . . TIRE CHAINS

GENERAL SALES OFFICES • YORK, PA.

Durkee-Atwood Appoints Rich as Sales Manager

Lawrence M. Rich has been appointed sales manager, Jobbers' Division, of the Durkee-Atwood Company, Minneapolis, according to an announcement made by Mr. H. C. Atwood, president. Durkee-Atwood manufactures rubber and chemical products.



L. M. Rich

Mr. Rich has been in the automotive industry for over 20 years. One of the first in the industry to be ordered to active duty with the Armed Forces, he served as major in Army Ordnance Department from July, 1940, to the early part of 1946.

Prior to his service with the Army, Mr. Rich was associated for a number of years with M R C Bearings Service Company, Division of the Marlin-Rockwell Corporation.

1947 Plans Announced At Nash Dealer Meetings

At a series of meetings held in many of the large cities during the past month, Nash announced to its dealers plans for 1947 sales.

The 1947 model, which is now coming off the production lines, differs from the current model only in minor variations of design and trim. The front grille work is about 6 in. wider, a new hood ornament has been added, and 11 colors of body paint are now offered.

The present interior ivory Tenite trim is replaced with maroon and the door inset panel is now chromium instead of Tenite.

In its bid for a bigger place in the sun, Nash is increasing and intensifying its present advertising program for the coming year.

The truck has again been postponed because of difficulties in obtaining materials and the other headaches which have harassed automobile production for the past year.

2-Tool-Team PUTS PROFIT

In Quick Clean-Up Jobs!

1 POWER-BUFFER Cleans and Polishes!

Black & Decker Portable Electric Power-Buffers clean, polish and seal car surfaces in ONE operation . . . removing grime and traffic film . . . producing a hard, durable surface. What's more, they have correct power and speed for obtaining final high lustre after spraying—and for rubbing out "orange peel" in lacquer finish. Two popular models: Automatic Power-Buffer (illustrated) feeds Power Glaze* Liquid polish from built-in reservoir while working, eliminates need for hand polish application; Standard Power-Buffer, without automatic feed and reservoir.



2 VACKAR* Removes Dust and Dirt!

Vackars are super-powered, compact, self-contained vacuum cleaners. They pull dirt and dust from upholstery, bodies, floors . . . remove excess moisture after scrubbing upholstery and pads . . . clean floors, walls, ceiling of your shop. Outlet hose connection gives hurricane blower action for cleaning engines. Its 15-foot flexible hose easily reaches out-of-the-way corners. Rolls easily on ball-bearing casters, "tows by the hose."

Ask your nearby Black & Decker Distributor today for full details on these two profit-making tools. For complete information on Buffers, Vackars, Valve Seat Grinders, Valve Refacers, Drills, Sanders and many other Portable Electric Tools for automotive work, write today for your free copy of our catalog to: The Black & Decker Mfg. Co., 627 Pennsylvania Ave., Towson 4, Md.



LEADING DISTRIBUTORS EVERYWHERE SELL

Black & Decker

PORTABLE ELECTRIC TOOLS

*Trade Mark Reg. U. S. Pat. Off.

WATCH FOR OUR
ADS IN THE
SATURDAY EVENING
POST



When a manufacturer asks you to "watch for our ads in the Post," he's calling your attention to the *best* kind of local support.

For advertisements in the Post reach your *best* customers—the *leaders*, who are first to buy the new and better things.

And advertisements in the Post get attention. For people like to read ads in the Post—far more than in *any other magazine*.

THE SATURDAY EVENING
POST

AUTOMOBILE AND AUTOMOTIVE AFTERMARKET ADVERTISERS IN THE SATURDAY EVENING POST

A

A. C. Spark Plug Division,
General Motors Corporation
Allis-Chalmers Manufacturing Company
American Bantam Car Co.
American Chain & Cable Company, Inc.
Anderson Company, The
Armstrong Rubber Company, The
Auburn Spark Plug Co., Inc.

B

Bear Mfg. Co.
Belden Mfg. Co.
Bell Company, Inc., The
Bendix Aviation Corporation
Black & Decker Mfg. Co.
Borg-Warner Corporation
Bowes "Seal Fast" Corporation
Buick Motor Division,
General Motors Corporation
Burgess Battery Company

C

Cadillac Motor Car Division,
General Motors Corporation
Carpenter Manufacturing Company
Casco Products Corp.
Casite Corp., The
Caterpillar Tractor Co.
Champion Spark Plug Company
Chevrolet Motor Division,
General Motors Corporation
Chicago Streamlite Corporation
Chrysler Corporation
Chrysler Division,
Chrysler Corporation
Continental Oil Company
Cushman Motor Works

D

Delco-Remy Division,
General Motors Corporation
De Soto Division,
Chrysler Corporation
Diamond T Motor Car Co.
Dodge Division,
Chrysler Corporation
Donaldson, Inc.
du Pont de Nemours &
Company Incorporated, E. I.

E

Electric Auto-Lite Company, The
Electric Storage Battery Company
Ellinwood Industries

F

Federal-Mogul Service
Division of Federal-Mogul Corporation
Firestone Tire & Rubber Co., The
Fisher Body Division,
General Motors Corporation
Fisk Tire Company, Division of
United States Rubber Company
Ford Motor Company
Fram Corporation
Fruehauf Trailer Company

G

Galvin Manufacturing Corporation
General Electric Company
General Motors Corporation
General Tire & Rubber Company, The
GMC Truck & Coach Division,
General Motors Corporation
Goodrich Company, The B. F.
Goodyear Tire & Rubber Co., Inc.
Gould Commercial Division,
National Battery Corporation
Grizzly Manufacturing Company
Guide Lamp Division,
General Motors Corporation
Gulf Oil Corporation

H

Hastings Manufacturing Company
Hollingshead Corporation, R. M.
Hollis Company
Hudson Motor Car Co.
Hull Mfg. Co.

I

International Harvester Company

J

Johnson & Son, Inc., S. C.

K

Kaiser-Frazer Corporation.
Graham-Paige Motor Corporation
Karriall Corporation
Kelly-Springfield Tire Company, The
Kendall Refining Company

L

Lee Rubber & Tire Corporation
Lincoln Division,
Ford Motor Company
Lubaid Company
Lyon, Incorporated

M

Macmillan Petroleum Corporation
Mack Trucks, Inc.
Make-A-Lite Division,
Chefford Master Mfg. Co., Inc.
McQuay-Norris Mfg. Co.
Mercury Division,
Ford Motor Company
Muskegon Piston Ring Co.

N

Nash Motors, Division of
Nash-Kelvinator Corporation
National Carbon Company Inc.,
Unit of Union Carbide and
Carbon Corporation
New Departure Division,
General Motors Corporation
Noblitt-Sparks Industries, Inc.
Nu-Enamel Corp.

O

Oldsmobile Division,
General Motors Corporation

P

Packard Motor Car Co.
Pennsylvania Grade Crude Oil Association

Pennsylvania Rubber Company
Pennzoil Company, The
Perfect Circle Company, The
Petroleum Solvents Corp.
Phillips Petroleum Company
Plymouth Division,
Chrysler Corporation
Polaroid Corp.
Pontiac Motor Division,
General Motors Corporation
Publicker Industries, Inc.
Pyroil Company

Q

Quaker State Oil Refining Corporation

R

Raybestos, The Division of
Raybestos-Manhattan, Inc.
Ray-O-Vac Company
Reo Motors, Inc.

S

Schrader's Son, A. (Div. of
Scovill Manufacturing Company)
Schult Corporation
Sealed Power Corporation
Seiberling Rubber Company
Shell Oil Company, Inc.
Sherrill Instrument Company
Simoniz Company, The
Simplex Products Corp.
Sinclair Refining Company, Inc.
Socony-Vacuum Oil Company, Inc.
Standard Oil Company of California
Stewart-Warner Corporation
Studebaker Corporation, The

T

Texas Company, The
Tide Water Associated Oil Company
Timken Roller Bearing Company, The
Trico Products Corporation

U

United Motors Service, Division of
General Motors Corporation
United States Asbestos, Division
of Raybestos-Manhattan, Inc.
United States Rubber Company
U. S. Industrial Chemicals, Inc.

W

Wagner Electric Corporation
Walker Manufacturing Company of Wisconsin
Wayne Pump Company, The
Westinghouse Electric Corporation
White Motor Company, The
Willard Storage Battery Company
Willys-Overland Motors, Inc.
Wind Turbine Co.
Wittie Mfg. & Sales Co.
Wolf's Head Oil Refining Company

Z

Zecol, Inc.

Recharging Batteries

(Continued from page 88)

which gradually forms throughout the plates as the lead sulphate crystallizes. It is difficult to reconvert this crystalline lead sulphate, and such a battery should be given special treatment. The Association of American Battery Manufacturers recommends that a sulphated battery be charged one-half the normal charging rate

for up to 100 hours. This long charging cycle is necessary to substantially reconvert the crystals of lead sulphate back into active material.

As an added check during quick-charging, the battery cell voltages should be checked a few minutes after charging has begun. If the voltage readings vary more than 0.2 volt, quick-charging should be stopped since this indicates that a partial short is developing in the low cell.

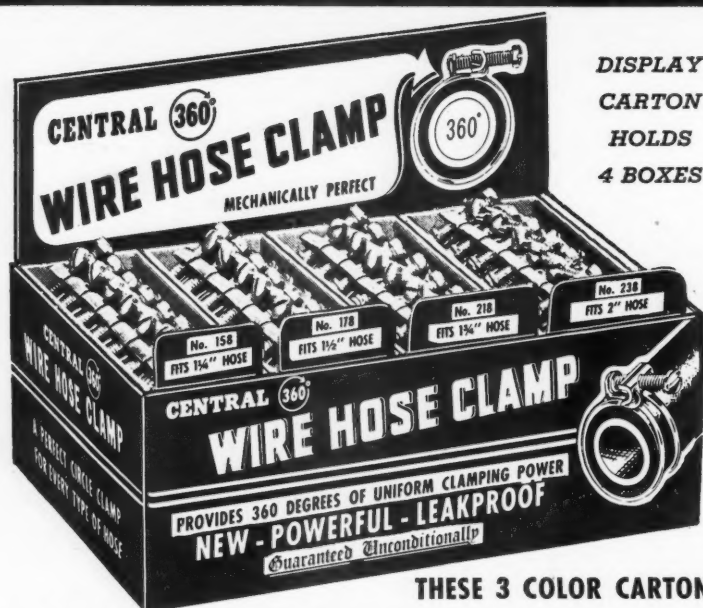
Battery electrolyte must not be allowed to exceed 125° F. during quick-charging. High charging rate plus high temperature will cause serious damage to the battery plates and separators.

Be sure to observe all the instructions and use all the safeguards provided by the quick-charger manufacturers during the quick-charging procedure.

We have already covered failures of batteries due to building up of sluffed-off positive plate material on tops of the negative plates and failures due to overcharging (see illustration). Another type of failure results from cycling, that is, repeated discharging and recharging of the battery. After this has occurred a great number of times, the outside negative plates will be found to have lost a considerable part of their active material, while many of the inside positive plates will have lost active material by sluffing action. Chemical tests will reveal that the inside negative plates are fairly well worn out even though their appearance is not too bad. Final failure of a battery from cycling occurs when sluffed-off material bridges across between plates to produce an internal short circuit as illustrated, or else the plates become so worn out that they can no longer contribute effectively to battery action.

Internal short circuits may take place in a battery due to building up or treeing action between plates of the sluffed-off material and also from mechanical causes such as failure of a separator. Such failure may result from buckling of the plates due to overcharging or from vibration due to loose mounting of the battery in the vehicle.

THIS BEAUTIFUL DISPLAY FEATURES
THE CENTRAL "360" WIRE HOSE CLAMP



DISPLAY
CARTON
HOLDS
4 BOXES

THESE 3 COLOR CARTONS
ARE YOUR SILENT SALESMEN—THEY REALLY SELL CLAMPS!

Here is the ideal package. This beautiful 3 color carton compactly carries 4 boxes of radiator hose clamps. Each box is a separate size. Each box is plainly marked in large type on tab to indicate the stock number of the clamp and the size of the hose that it services. Included are the four most popular sizes . . . that fit 90% of all radiator hose.

CENTRAL EQUIPMENT CO.

902 S. WABASH AVE. CHICAGO 5, ILLINOIS

CENTRAL EQUIPMENT CO.
902 S. Wabash Ave., Chicago 5, Ill.
Gentlemen: Please send FREE sample of your 360° Hose Clamp and your Bulletin No. 120-D.
Name.....
Address.....
City..... State.....

Unique Crankshaft Gage

The Frisz Crankshaft Journal Gage, made by the F & H Tool Supply Co., of South Bend, is designed to check crankshaft diameter, taper and out-of-round without removing the crankshaft. Used in conjunction with a micrometer, the Frisz gage is said to make possible immediate in-position measurements.

Mr. Service Station Operator,

have you kept track of your fuel pump jobs?

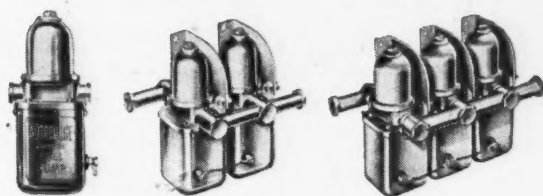


According to the Service Job Analysis for 1945, there were only 7 mechanical elements that more frequently needed maintenance than the fuel pump—38 other elements required less maintenance.

With so many jobs involving the fuel pump, wouldn't it be worth your while to give some thought to this item and perhaps capitalize on it to a greater extent?

Consider for a moment the Autopulse Electric Fuel Pump. Here is what you can do with it and what it will do for you. You can put it on any automobile, truck or tractor, any make, any size. It's easy and quick to install. You can mount it conveniently in the

fuel line on either side of the vehicle. When you standardize on the Autopulse, you can get along on a very small inventory. Because of its superior performance, it builds customer goodwill for you wherever you install it. The most beautiful part of it is, it's profitable—profitable to you.



AUTOPULSE

Write us direct for quotation

AUTOPULSE Corporation

2321 Brooklyn Ave., Detroit 1, Michigan

Service Men Give Their Seal of Approval to PURITAN'S 3 GASKA-SEALS

Puritan's three types of GASKA-SEAL have earned the Seal of Approval by service men all over the country. With the recent addition of GASKA-SEAL No. 3, the gasket liquid of a hundred uses, the Puritan line of GASKA-SEALS is com-

plete and enables the service man to tackle any gasketing job he encounters.

But be sure to keep a supply of all three Puritan GASKA-SEALS on hand. Each has its specific uses and each is superior for those uses.

GASKA-SEAL NO. 1 Hardening Type

Spreads easily. Sticks quickly. Sets hard. Especially recommended for water connections, push rod covers, oil pan, valve plates, transmission, differential housings. Resistant to anti-freeze and high temperatures.

GASKA-SEAL NO. 2 Non-Hardening Type

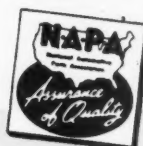
Spreads easily. Seals tightly but stays soft and pliable—easy to remove. Recommended for head gaskets, crank case assemblies, thermostat connections, oil and gas connections, etc. Resistant to anti-freeze and high temperatures.

GASKA-SEAL NO. 3 Liquid Type

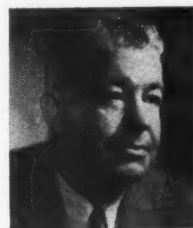
Goes on with a brush. Stays permanently elastic at temperatures from 75°F below zero to 500°F above. Unaffected by gasoline, oil, anti-freeze or other automotive liquids. Use on all types of gaskets from metal-faced to natural rubbers. Use alone where close tolerances are required. Adhesive to all surfaces. Forms permanent seal but makes disassembly easy. Convenient-to-use can with long handle brush.

PURITAN COMPANY, INC.
ROCHESTER 6, NEW YORK
HYDRAULIC BRAKE FLUID AND FLUSHING FLUID • GASKA-SEAL NO 1, 2, AND 3
SHOCK AND KNEE-ACTION OIL

Your NAPA jobber carries Puritan Products. Get all three Puritan GASKA-SEALS the next time you order.



Ford Elected Chairman By Piston Ring Mfgs.



T. L. Ford

At the recent annual meeting of the Piston Ring Manufacturers Group, held at Hot Springs, Va., T. Latimer Ford of Koppers Piston Ring Division was elected to

the Chairmanship of the Executive Committee.

He succeeded Burt Close, of McQuay-Norris Company, who has served two one-year terms in this capacity.

Spare Tires To Be Put On New Cars

Civilian Production Administration has reversed its previous decision, announced last week, about spare tires as original equipment.

New automobiles delivered after December 16th, may be equipped with spare tires as original equipment for the first time since 1942, according to a CPA announcement released. The new decision to allow manufacturers to sell fifth tires and tubes with new cars is based, CPA states, on estimated production of 16 million passenger car tires during the fourth quarter of this year.



"We're putting up an extra large sign here in hopes the men will notice it."

Chek-Tabs

BRING 'EM BACK!



Get lagging customers in...sell extra services...this easy way!

Don't let your best customers slip away from you. Don't miss those complete service sales that mean *extra profits* to you and better car performance to your customers. Put a Chek-Tab on every car you service—it sticks easily in the doorjamb, right at eye-level!

Chek-Tabs remind your customers when their

cars need service and bring 'em back on time . . . to you. You don't miss profitable sales.

When you put a Chek-Tab on a car, tell your customer. He appreciates this service. There are Chek-Tabs for every service—oil, lubrication, battery, filters, tire-switching, radiator cleaning, etc. Order them from your suppliers.



FREE

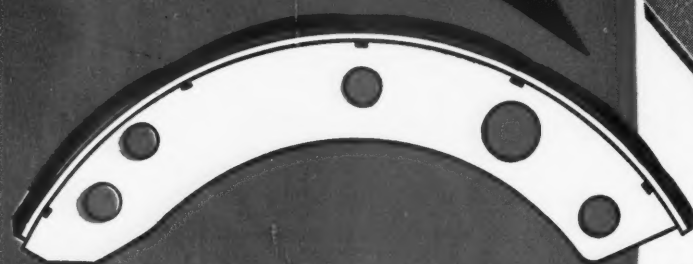
—This 20-page book is full of merchandising ideas that make Chek-Tabs build profits for you. Get your free copy. For service station operators, car dealers, garages and their suppliers. Write—Mystik Adhesive Products, 2640 N. Kildare, Chicago 39.

Sales offices in all major cities.
Export office—New York City.
Canada—G. A. Moggridge Co.,
Ltd., St. Catharines, Ont.



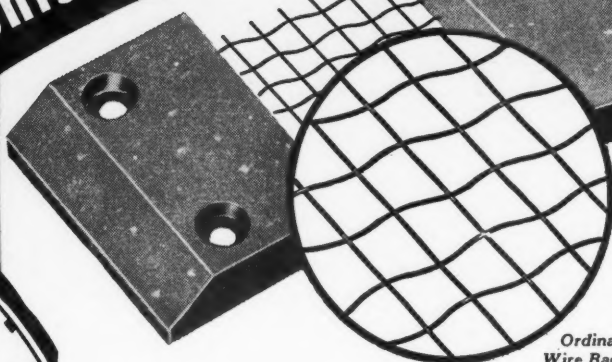
Self-Stick Cloth and Paper Tapes, Protective and Masking Materials, Waterproof Packaging Papers, Advertising Signs and Displays, Self-Stick Stencils

GRAFILD MESHLOCK



prevents "spot-bulge" when riveting lining to brake shoes—no more spoiled linings, spongy brake pedal, "daylight" between lining and shoe.

prevents brake lining "bulge"



Ordinary Wire Backing

STAY AHEAD WITH GRAFILD BRAKE LINING

MESHLOCK is only one of many extra features that are built into every Grafild Lining. From basic formula through each manufacturing step are Grafild developments that provide outstanding linings for every braking requirement in the automotive and industrial fields... with Prescribed Friction that assures safe stops, quietly and smoothly and with maximum resistance to wear.

WORLD BESTOS CORP.

NEW CASTLE, INDIANA



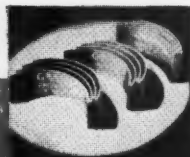
Grafild PF Prescribed Friction Sets — Engineered for each type brake.



Grafild Deluxe Woven — A super quality, dense, high friction woven lining.



Grafild Royal Grid Molded (Rolls) — A top quality wire-back molded lining.



Grafild Truck Group Blocks — Undrilled, master segments engineered for trucks.



Grafild Wire Back Sets — Wire-back sets for popular cars.



Grafild Metro Marks — Engineered for heavy trucks and buses.

Clearing House

(Continued from page 60)

cal. You will, therefore, get no additional speed or power from the use of the truck engine, over the standard passenger car engine.

I would recommend you continue using the ratio used in the passenger car. This gives you best performance for all-around operating conditions and I do not think you can improve upon it.

Rebuilt Engine Still Knocks at High Speed

I have a 1937 Studebaker Dictator which I have overhauled, including boring, grinding, crankshaft, new camshaft bearings and valve grind.

This motor had a knock at about 35 m.p.h. so my customer decided to have all the work done and put motor up in good shape.

After this was all done it still has a knock at 35 m.p.h. on up, and if anything, I believe it is worse now than it was.

When I started this motor it did not run over 30 sec. until it froze to the end of crankshaft journal. After I freed this up the motor ran fair but still noisy.

I have taken the pan down and changed rods, still the same thing. As a last resort I took the motor completely down, checked the shaft on a grinding machine and it was not over .001 out at any point.

This shaft is not the original shaft but the same number.



"Not that I don't appreciate this, lady, but please don't tell it around town."

I would like your idea on what is wrong as I am at my rope's end.

The connecting rods were alined but Nos. 1 and 2 still set a little sidewise on shaft and have been changed three times—different rods at all changes.—Maurice M. Irwin, Noblesville, R. R. No. 3, Indiana.

It is rather difficult to say just what might be the cause of the trouble you are experiencing with the 1937 Studebaker, particularly

since the engine has been completely overhauled and rechecked several times. The first point to check would be the timing gears, for if these are worn and have appreciable play, a knock such as you describe will result. This knock cannot be shorted out. However, the fact that connecting rods in Nos. 1 and 2 cylinders have been changed three times, always because of a bent or twisted rod, would seem to indicate that your

(Continued on page 108)

Winterproof IGNITION NOW!

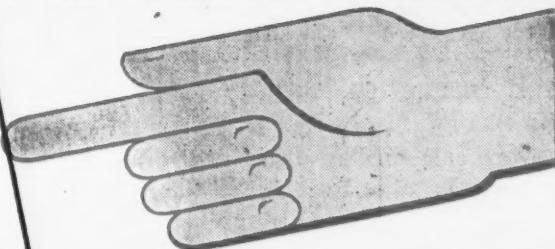
with

NIEHOFF

APPROVED QUALITY PRODUCTS

Check ✓

- Distributor
- Coil
- Condenser
- Voltage Regulator and Generator
- Starter



Where Ignition units are beyond servicing, replace with NIEHOFF Approved Quality Products that protect the battery, conserve gas and oil, assure quicker starting and new car performance. NIEHOFF Ignition Parts are available through a national network of NIEHOFF Jobbers.

C. E. NIEHOFF & CO.

4925 Lawrence Ave., Chicago 30, Ill.

Branches:

1342 S. Flower St., Los Angeles 15, Calif.
250 W. 54th St., New York 19, N. Y.

CARE WILL SAVE YOUR CAR

Aligning Doors on GM Cars

(Continued from page 44)

3. Move the door in or out as necessary for proper alignment.
4. Tighten hinge screws securely. Seal the inner edge and recesses at the side of each hinge with sealing compound and re-assemble metal plates at inner edge of each hinge.

To move the door up or down at the hinge pillar:

1. Remove the door hinge pillar weatherstrip retainer, loosen the rubber weatherstrip at each hinge and remove the stamped metal weatherstrip sealing plate covering the inner edge of each hinge.

2. Loosen the three hinge screws set in the door hinge pillar.
3. Move the door up or down as necessary for proper alignment.
4. Tighten the hinge screws securely. Seal the inner edge and the recesses at the sides of each hinge with sealing compound and reassemble the metal plates at the inner edge of each hinge. Re-cement the weatherstrip in place. Re-assemble the metal weatherstrip retainer to the pillar.

To move the door to the rear in the body opening to correct excessive vertical spacing at the body lock pillar, shims should be placed under either or both the body and door hinge pillar half of either or both hinges. Place the shims between the hinge half and the face of the pillar. Removal and reassembly of hinge parts is done in the same way as for the preceding alignment procedures.

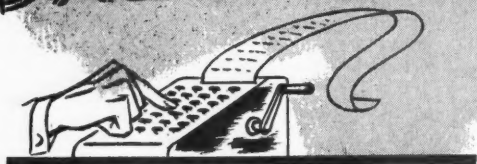
To move the door closer to or farther away from the body panels at the lock pillar:

1. Loosen the lock striker plate on the body lock pillar.
2. Move it in or out until it is properly aligned. The back of the striker plate is serrated, matching serrations on the pillar, to prevent it from moving after the screws have been securely tightened.

Excessive vertical spacing between the door and the hinge pillar is usually the result of sprung hinges, which should be replaced for a satisfactory job.

The adjustable dovetail wedge plate, used on the body lock pillar, (Continued on page 104)

SALES add up FAST



when you "talk up" the

Klemm

GASOLINE FILTER

with *Chemistone* the original
CONTROLLED POROSITY ELEMENT

As a sales-maker, it has everything—a big market, established demand, easy sales and volume profits. You can readily make it the top favorite in your sales parade. Every car needs a Klemm Gasoline Filter! It insures **CLEAN, CLEAR** fuel... stops water, dust, sediment, etc. from clogging carburetor valves... and avoids motor stalling. **PUSH IT FOR PROFIT!**



Priced low for quick, easy sales

Quickly installed... a positive money-saver

Simple in operation... outstanding performance



KLEMM AUTOMOTIVE PRODUCTS CO.

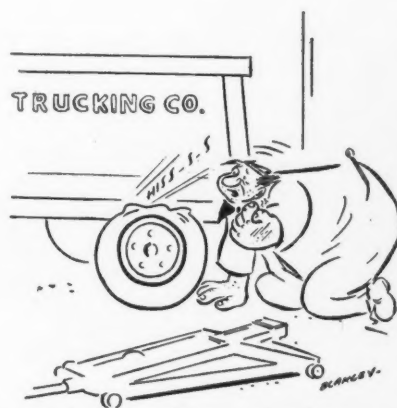
1718 N. Damen Avenue, Chicago 47, Illinois

Export Division: Guiterman Co., Inc., 35 S. William Street
New York 4, N. Y.

Sales Makers!

Colorful counter displays like this, and powerful publication advertising, help to build sales for Klemm distributors.

ORDER FROM YOUR JOBBER!



DO IT RIGHT WITH HALL

If you can't SELL them a new car you can GIVE them new car performance such as many a motorist never before dreamed his old car could deliver.

But you've got to do the job right and that calls for HALL reconditioning equipment such as the Ring Ridge Reamer, Model H Cylinder Hone and Piston Pin Hole Hone Set pictured here. Or the Model E-J ECCENTRIC Valve Seat Grinder, Model 80 Wet Type Valve Refacer and Valve Seat Inserter also made by HALL.

Your Jobber can tell you why HALL is the right equipment for doing the job better, faster and at less cost or your request to the factory will bring complete information by return mail.

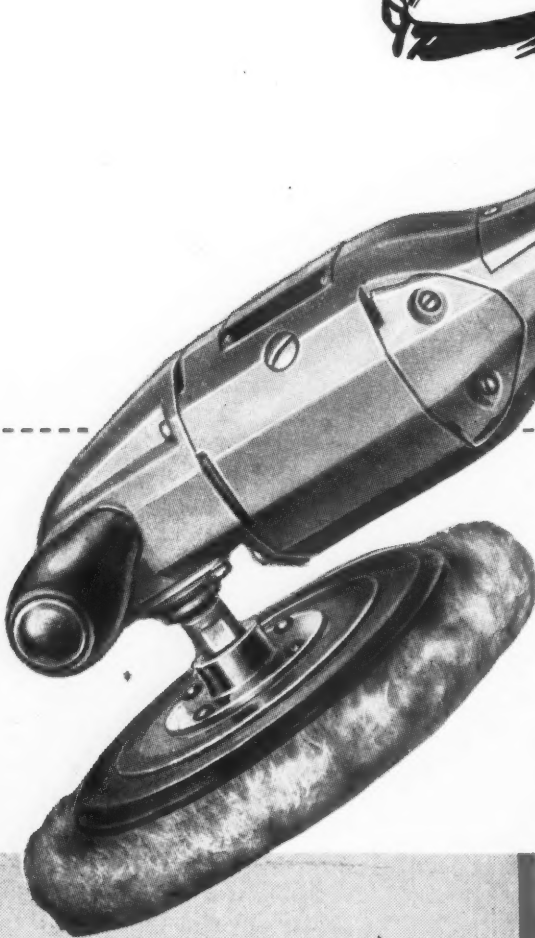
**THE HALL MFG. COMPANY
TOLEDO 7, OHIO**



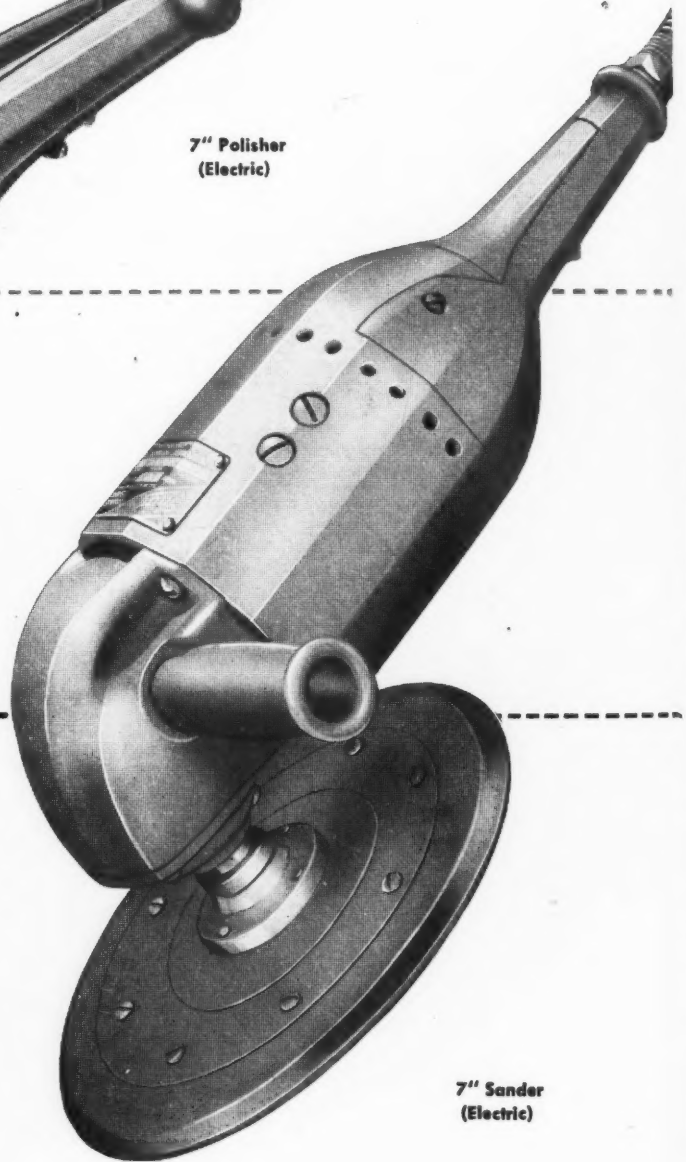
For Sanding or Polishing...



THE TOOLS



7" Polisher
(Electric)



7" Sander
(Electric)

Thor

ELECTRIC TOOLS

Thor makes a complete line of portable electric tools—Drills, Hole Saws, Sanders, Grinders, Polishers, Nut Setters, etc.—in a range of sizes and types to meet every shop need. For easy handling, top output, more profits, specify Thor Tools.

INDEPENDENT PNEUMATIC TOOL COMPANY

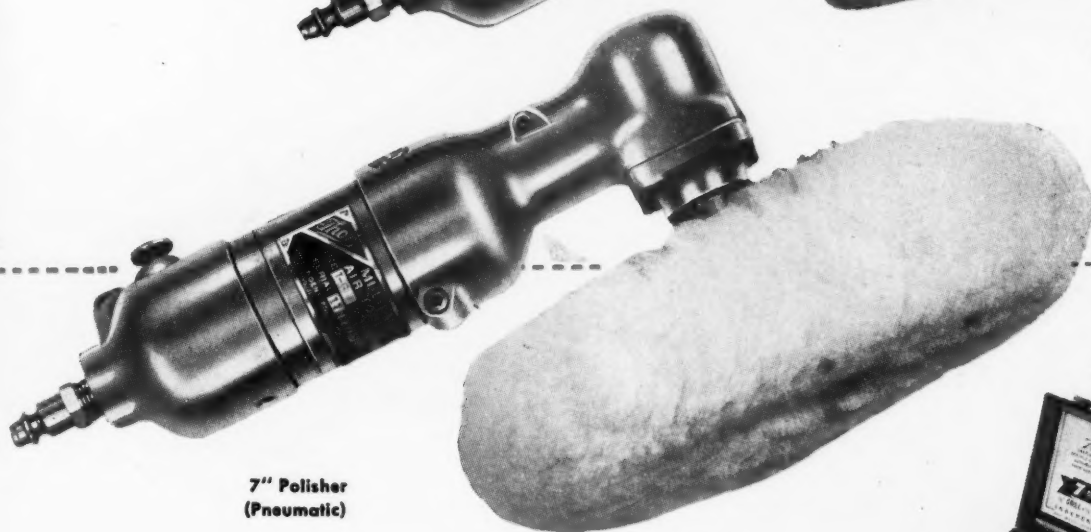
600 W. Jackson Boulevard, Chicago 6, Illinois

| | | | | | | | |
|-------------|----------------|---------------|-----------------|-----------------|-----------|---------|---------|
| Birmingham | Boston | Buffalo | Cincinnati | Cleveland | Denver | Detroit | Houston |
| Los Angeles | Milwaukee | New York | Philadelphia | Pittsburgh | St. Louis | | |
| St. Paul | Salt Lake City | San Francisco | Toronto, Canada | London, England | | | |

Your *Thor* Jobber Has YOU NEED!



7" Sander
(Pneumatic)



7" Polisher
(Pneumatic)

Whatever your job requirements may be—Thor offers a tool in the right size, speed and capacity . . . The Thor Line is COMPLETE! With Thor Tools you get work out faster . . . and, at the same time save money in operating and maintenance costs. Designed especially for automotive shop service—Thor Tools have been job-tested for more than fifty years on the production lines of the nation.

For the right tool for every job—see your Thor Jobber.

Thor PORTABLE POWER
TOOLS

PNEUMATIC TOOLS • UNIVERSAL AND HIGH FREQUENCY
ELECTRIC TOOLS • MINING AND CONTRACTORS TOOLS



Thor

MULTI-MATIC AIR TOOLS

Here's an ideal kit for shop service. Powered by air, Thor MULTI-MATIC TOOLS operate on compressor as small as 3 H.P. Selection includes: Drills, Hole Saw, Grinders, Polishers and Sanders . . . 7 complete tools in one compact kit.

Aligning Doors on Cars

(Continued from page 100)

may have to be adjusted to allow the dovetail on the door to enter centrally after the door is aligned. The wedge plate assembly is mounted to the door lock pillar by means of a movable anchor plate inside the pillar. The screw holes in the lock pillar are elongated vertically to allow for adjustment.

Rear door repair and alignment

demands slightly different technique.

The rear door hinges incorporate the long hinge strap bolted to the face of the inner door panel. Provision is made for rear door alignment at the hinges, striker plate, and door dovetail.

To move the door closer to or further away from the body panels or up or down at the hinge pillar:

1. Loosen the three hinge screws on the body hinge pillar.

2. Move the hinges in or out until proper alignment is secured.

3. Tighten all screws securely.

To move the door to the front or rear in the body opening to correct vertical spacing:

1. Remove the door trim pad.
2. Loosen the three hinge screws to the door inner panel.
3. Move the door as necessary for proper alignment. (Additional up and down movement of the door may also be made by loosening these screws.)
4. Tighten screws and replace door trim pad.

Lock pillar adjustments on the rear doors are made in the same manner as on the front doors.

When it becomes necessary to align the rear compartment lid, due to misalignment, water leak, or other cause, the lid flange should first be inspected for proper alignment and smoothness along the underside where the flange contacts the rubber weatherstrip. If any unevenness is found it should be carefully leveled and formed with a hammer and dolly. This may be done by first applying several layers of adhesive tape to the painted side of the flange to protect the paint.

In cases where the lid does not fit or is not spaced properly in the opening, it is possible to shift the lid either fore or aft or sideways at the hinge screw holes sufficiently to adjust it in the opening. The

(Continued on page 106)



Strange somebody didn't think of it before . . . this effective combination of smooth hydraulic power and cantilever boom that makes light work out of heavy handling jobs in garage and shop.

The Ruger picks up loads right off the floor or at any height within its range . . . lifts or lowers as required . . . travels with load wherever you can push a hand truck.

Works in tight places . . . crane hook reaches over to pick motor right out of chassis . . . special transmission attach-

ment reaches under to remove or replace heavy transmissions.

Only 2 controls: (1) lever that operates hydraulic pump to raise load; (2) release valve to lower the load. Fine-threaded release valve stem enables load to be lowered smoothly, gently . . . fast or slow . . . minimizes danger of accidents. Anyone can operate a Ruger.

Ruger Hydraulic Floor Cranes are built in 1-ton, 2-ton and 3-ton sizes. Write for bulletin to nearest address below.

RUGER Equipment Co., Inc.

Load Lifting and Handling Devices

408 Leader Bldg.
Cleveland 14, Ohio

P. O. Box 3821
Portland 8, Oregon



"There's someone here with a sense of humor that's going to get him in trouble someday!"

Build for the Future with a **UNITED**

If you're in business to stay—if you want to grow soundly and steadily—then you'll find a United Motors franchise the soundest foundation on which to build for the future.

First of all, a United Motors franchise brings you the greatest *pre-sold* and most rapidly *expanding* market in the field. For United Motors lines are *original equipment* on the majority of all cars—old ones on the road, new ones off the lines. That nationally advertised United Motors Service sign out in front of your place tells car owners that you have what they want for repairs, replacements and service.

What's more, you can *always* be sure that United Motors will back you up with result-getting sales and merchandising programs, latest service information, complete parts lines.

Start today to build a better tomorrow in the automotive service business. See your United Motors distributor, or write us direct.

UNITED MOTORS FRANCHISE



A UNITED MOTORS FRANCHISE GIVES YOU THESE ADVANTAGES

- UP-TO-THE-MINUTE SERVICE INFORMATION—easy to use; speeds your work.
- ORIGINAL-EQUIPMENT PARTS—leading lines of leading manufacturers.
- NATIONALLY KNOWN LINES—respected and accepted everywhere.
- TIMELY SALES PROGRAMS—individually planned.
- MERCHANDISING ADVICE—based on long experience.
- WAREHOUSE BACKING—saves time, broadens inventory availability.
- COMPLETE PARTS LINES—parts for old cars and new.
- UNITED MOTORS SIGN—your local address, tying you directly to national advertising.

UNITED MOTORS SERVICE

DIVISION OF GENERAL MOTORS CORPORATION • GENERAL MOTORS BUILDING, DETROIT 2, MICHIGAN

| | | | |
|--|-----------------------|-----------------------------|--|
| DELCO Batteries | HYATT Roller Bearings | NEW DEPARTURE Ball Bearings | DELCO-REMY Starting, Lighting and Ignition |
| AC Fuel Pumps, Gauges and Speedometers | DELCO Auto Radios | HARRISON Thermostats | KLAXON Horns |
| INLITE Brake Lining | HARRISON Heaters | DELCO Shock Absorbers | HARRISON Radiators |
| DELCO Radio Parts | DELCO Home Radios | GUIDE Lamps | DELCO Hydraulic Brakes |

Aligning Doors on Cars

(Continued from page 104)

hinge screw holes are slotted for adjustment.

Should the lid be too far in or too far out in relation to the body opening, correction may be made by raising or lowering the lid. To raise the upper end of the lid, place a thin shim or shims at the upper edge of one or both hinges, depending on which side of the lid requires raising. To lower the lid place

the shim or shims at the lower ends of the lid hinges.

To increase the locking tension or sealing along the lower edge of the lid, loosen the two striker plate attaching bolts and move the plate downward. To decrease the tension move the plate upward.

Bowers to Exhibit on Boardwalk Permanently

The Bowers Battery & Spark Plug Company has taken over the former Crane Building, located at

Georgia Avenue and The Boardwalk, in Atlantic City, where it will maintain a permanent exhibit of storage batteries, spark plugs, radios, television, flashlight batteries and battery chargers, all of which they manufacture.

The two-and-one-half-story building will be devoted to sales rooms and warehouse, in addition to permanent exhibits. Only one-third of the available space will be occupied by the Bowers Battery & Spark Plug Company; therefore, the balance of these exhibition rooms will be offered to other manufacturers of automotive products where they can maintain a permanent exhibit, with very little cost.

A trained staff will man the exhibit floors which will be called the "Automotive Exhibit of the Boardwalk." Conference rooms will be available for sales meetings on the upper floor overlooking the solarium and the ocean.

Palmer Utility Wheels

The Palmer Mfg. Co., of Cleveland, has entered the automotive service field with the introduction of a line of rubber tired steel utility wheels to be sold individually or in sets.

Palmer makes use of a special wheel mounting which employs no cross axle. The wheels are sold in 8-in. and 5½-in. diameters in sets of four with fittings included, or as individual wheels with both ½-in. and ⅜-in. bushings. They are designed for use on engine stands, tool carts, dollies, movable work tables and so forth.



Pin-up of
SERCO GIRL
No. 9
Mailed Free
on Request.
Order by
Number

SELL THESE SEASONAL FAVORITES!



SERCO

Permanent seal for cracked cylinder heads, cracked blocks, leaky pumps and radiators! Here's insurance against loss of anti-freeze through leaks! A fast winter seller — and a real profit maker.

NOXO

Motor vitalizer for quicker starting, better pickup on winter days! Removes gum, carbon, engine varnish from rings and valves — then keeps motor clean! Alert dealers sell Noxo with every oil change!



Other favorites in the profitable Serco line: Rusgo, Ki-Mo, Lubro, Shamo, Reeso, Solvo — all backed by the famous Serco guarantee!

Service Supply Co.  **PRODUCTS**

1115 - 7th Street, Denver 4, Colo.



"All right, then! Will you pretty please with sugar on it sell me a carburetor!"

Free! WRITE WEATHERHEAD FOR LARGE PIN-UP POSTER OF THE GIRLS



"Why don't you help me down silly boy!"

Weatherhead THE ORIGINAL EQUIPMENT LINE



THE WEATHERHEAD COMPANY • CLEVELAND 8, OHIO
NEW YORK • DETROIT • CHICAGO • ST. LOUIS • ATLANTA • DALLAS • LOS ANGELES

Clearing House

(Continued from page 99)

trouble might be in those cylinders or in the crankshaft.

I would first of all recommend that you try to localize the knock by shortening out the cylinders. Evidently you have not done this, or you would have mentioned it in your letter. If you localize the knock in certain cylinders that will,

of course, aid you materially in finding the actual cause.

You did not mention making any check on crankshaft end play and this should not be in excess of .006 in.

I assume that your main bearings, camshaft bearings and wrist pins are all fitted with the proper clearance and that the pistons are not loose enough to cause any slap or knock.

I think you should also check to

make sure that the trouble is not in a loose flywheel or in defective mounting bolts. Be sure that the face of the valve lifters is smooth and not grooved or marred in any way and also that the surface of the cams is not worn, although a knock from that source is more apt to be heard at low idling speeds.

It might also pay to check the various accessories, such as water pump, generator and distributor, to see if they might be the cause of the trouble and also a worn fan belt will often sound like a bearing knock and, therefore, should not be overlooked.

I trust these suggestions will be of assistance.

Essex Clutch

I have a 1928 Essex and would like to know what kind of a clutch is interchangeable with it.

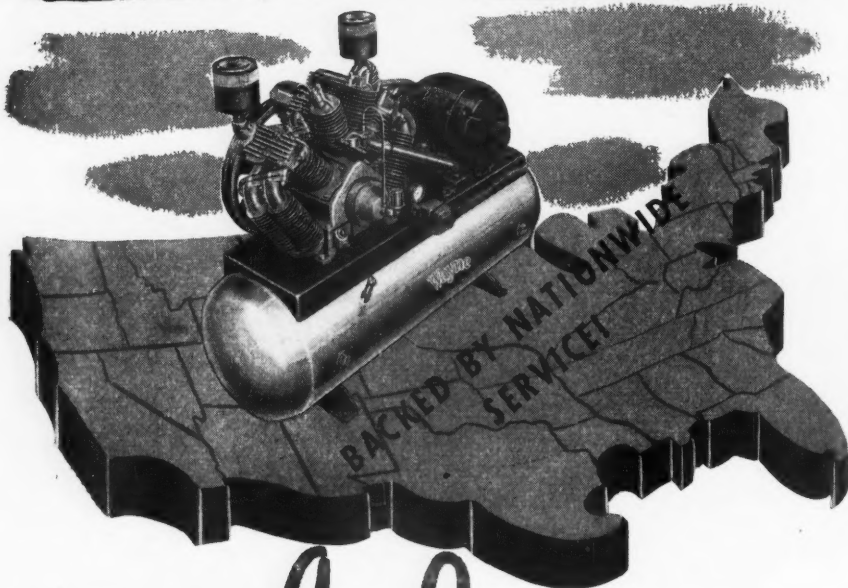
Can you give me full dope on the clutch, also what kind of oil to put in it?—Daniel H. Kessler, Orwin, Pa.

AFTER checking our interchangeability tables I find there is no other clutch which can be installed in your 1928 Essex. This clutch is produced by the Hudson Motor Car Company, and I do not know of any company manufacturing oil for use in this clutch other than that offered by the Hudson Motor Car Company.



"... and that's my Aunt Emily holding my little nephew, Roger, age three ... and standing on the porch steps is ..."

PACKAGED Units of Power



WAYNE Air Compressors

ARE ALL WAYNE BUILT!



for your protection

WHEN you buy an Air Compressor from Wayne, you know it is backed by a responsible company with a Nation-wide Service Organization to assure your satisfaction. You get more air at less cost for power ... for more years. Wayne builds a complete line from 1.4 to 40 c.f.m. Every two-stage unit is scientifically tested and its efficiency certified. Write today for Wayne Compressor catalog and prices.

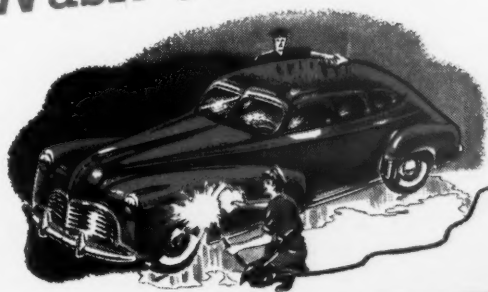
THE WAYNE PUMP COMPANY
FORT WAYNE 4, INDIANA, U. S. A.

WAYNE AIR COMPRESSORS
GASOLINE PUMPS • CAR WASHERS • AIR SCALES • REELS • LIFTS

"Grab Your Opportunity!"

CHECK THE HEAT RANGE OF ALL PLUGS

On Every
Wash Job



Here *is* an opportunity! Better gas, longer mileages, and normal driving speeds call for a "cooler" type of improved AC Spark Plugs. Plugs of a Heat Range that did a job in the days of lower octane gas and slower driving are too "hot" today. They are likely to split, blister, misfire, and cause preignition.

There are millions of these "wrong Heat Range" plugs still in use. Plenty are in your neighborhood. GET 'EM OUT! You'll sell new plugs!

Check the Heat Range of *all* plugs on every car, truck, bus, and tractor that comes in for *any* kind of service. Check it against the AC Specification Chart—and be sure.

ALWAYS
CHECK
HEAT
RANGE

- ★ When you give a WASH
- ★ When you CHANGE OIL
- ★ When you LUBRICATE
- ★ When you SERVICE A BATTERY
- ★ When you CHANGE OIL FILTERS
- ★ When you TUNE UP and REPAIR

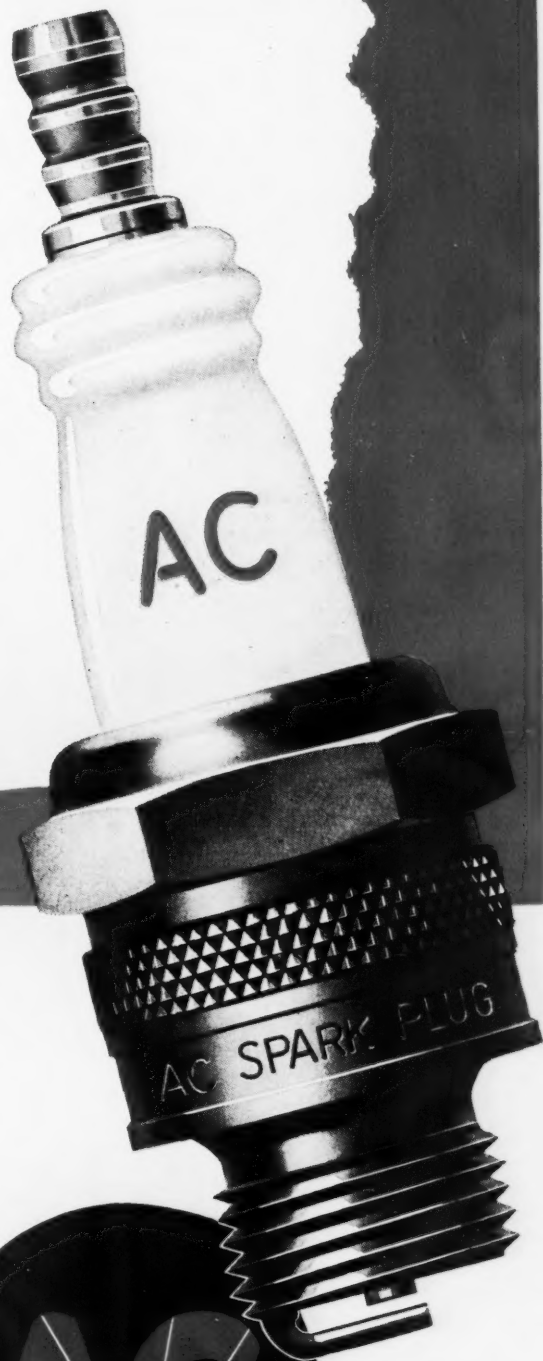
★ ★ ★ ★ ★ ★ ★ ★

AC SPARK PLUG DIVISION—GENERAL MOTORS CORPORATION

DECEMBER, 1946

When writing to advertisers please mention Motor Age

109



SPARK PLUGS

Effect of Coal Strike

(Continued from page 56)

portation of steel, and other materials and parts to the plants.

General Motors reported it was operating on a day-to-day basis on steel at the start of the strike, and could not estimate how long production would be maintained. Ford was expected to be able to continue for ten days to two weeks. Although the company has its own steel mill

and probably could continue to operate it for about three weeks, some of its suppliers undoubtedly would run short of steel in a shorter time. Chrysler did not comment on its situation, but since the company had cut schedules sharply in October, it might have enough in inventory to carry on a bit longer than others, but it too would be governed by suppliers' steel shortages. Nash, Packard, and Hudson all were in about the same situation as the larger companies with esti-

mates on how long they could continue to operate running from ten days to two weeks. Just how serious the effect of the coal strike would be on automotive production hinged entirely on the duration of the strike. Steel mills were expediting to slow production almost immediately in order to conserve coal. A short coal strike would probably work only minor mischief with the steel supply, but any prolonged stoppage would certainly have a most calamitous effect on the automotive industry, both from the steel shortage and from drives for increased wages if the miners should win important pay concessions.

Owen And Cox Elected Thermoid Vice-Presidents

John Owen, of Yardley, and Lester F. Cox, of Morrisville, were elected vice-presidents of the Thermoid Company at a meeting of the Thermoid Board of Directors recently. The announcement was



Vice-presidents Owen and Cox

made in Trenton by Fred Schluter, president.

Cox, factory superintendent of the Rubber Division, joined Thermoid in 1929. He started with the Production Department as a scheduler of brake lining production. In 1937 he was made factory manager of the Rubber Division. In 1938 he became factory superintendent of the Rubber Division.

Owen, who came to Thermoid in 1942 from Austin-Western Company, began his career with the Trenton firm as assistant manager, Industrial Rubber Products Division. He was made manager of that division in December, 1943, at which time Oil Field Products was set as a separate division, also under his control. In June, 1945, he became assistant vice-president of these two divisions.

KEEP ASKING

May we **CHECK**
YOUR BRAKES?

Safety Checking Programs reveal that two cars out of five need brake service of some kind. Nationwide Safety Campaigns and articles in newspapers are making car owners "Safety Conscious."

You can aid the Safety Program and get extra brake service work by asking each car owner you serve "May we CHECK YOUR BRAKES."

What's more, by skilled application of GATKE CUSTOM-BILT Sets when Brakes need relining, you assure extra performance that satisfies car owners, avoids time-wasting adjustments and makes lasting friends.

What an opportunity to develop quality service prestige and make friends who will stay with you when service work is harder to get.

Ask your GATKE Jobber.



Gatke CUSTOM-BILT **BRAKE LININGS**
BLOCKS SETS ROLLS SHEETS
GATKE CORPORATION
228 N. La Salle St., Chicago 1, Ill.



DESIGNED FOR MORE THAN A PASSING GLANCE...

the Visual Front
Commands Attention



This Visual Front does just what a good automobile showroom should do—puts the emphasis on car display. By clever use of available space, a station wagon is prominently displayed to both sidewalk and street traffic.

Broad expanses of clear plate glass are the key element of this Visual Front. By day, the showroom is flooded with an abundance of daylight. At night, modern lighting makes it the bright spot on the street.

Glass in many other forms supplements the effectiveness of a Visual Front. Doors of clear *Tuf-flex** tempered plate glass increase the openness... structural members and bulkheads can be colorful *Vitrolite**, the lustrous glass facing of enduring beauty. Partitions can be Blue Ridge patterned glass—for extra smartness and lighter offices. To save heat and reduce the possibility of condensation, the front can be glazed with *Thermopane**, the time-proved, multiple-pane insulating unit.

BEFORE YOU BUILD OR REMODEL, write for our Visual Fronts book. It's full of ideas you and your architect can use or adapt to make your showroom command more attention. Libbey-Owens-Ford Glass Company, 41126 Nicholas Building, Toledo 3, Ohio.

*Reg. U.S. Pat. Off.



LIBBEY·OWENS·FORD
a Great Name in **GLASS**

Wisconsin Auto Rebuilders Form Association

In July, 1945, a number of the leading automotive rebuilders of the Milwaukee area got together and formed an organization that really has something to discuss when the members meet periodically, for, during the lack of new cars, rebuilders have had more than they can do to put old cars back into operative condition. The organization formed is known as

the Automotive Rebuilders' Association. In spite of the fact that no effort had to be made to get new business the group has held together remarkably well. Instead, the subjects at meetings usually revolved themselves around the question helping each other to interpret government regulations correctly. An attorney was engaged, and no member of the rebuilders' group ever got into any trouble with the OPA or other government bureaus. Today there are 25 members, in-

cluding all of the leading rebuilding shops of the city, and it is expected that some of the smaller shops of the area, seeing what such an organization can do for members, will join. The aim of the group is, according to President Walter F. Kossow, to promote good will and good fellowship among its members; to discuss various problems confronting rebuilders and repair shops in the automotive industry, such as compulsory car inspection; the G. I. bill of rights; Interstate Commerce Commission rulings affecting the automotive trade; wages and hours of employment, and national, state and city laws and regulations which affect those engaged in rebuilding and repairing cars and trucks. While the meetings are generally rather informal, the attorney is always present and passes on any moot questions of law and the various regulations under which the automotive business is conducted.

Automotive Surplus

(Continued from page 57)

turers had to buy parts at the same prices as wholesalers. Consequently, they lost interest, and WAA will find it difficult to generate any enthusiasm.

The final reason lies in the minimum quantities offered, which in many lines in addition to surplus parts, have been much too large. This subject is now being looked into by a special Senate committee.



DURKEE-ATWOOD

AUTOMOTIVE PRODUCTS

DURKEE-ATWOOD CO. • MINNEAPOLIS 13, MINN.



"Well, officer, did I pass my driving test?"

When you're glad you have a
Snap-on

Service Operations from Real Life

Tightening Manifold Cap Screws

Take the cap screw that's up close to the carburetor . . . on many cars, it's tough to handle . . . but not with this Snap-on combination. Simply use a Snap-on ratchet, extension, and Flexocket containing a hidden spring to hold the socket at any desired angle. The Flexocket is so designed that the spring will not interfere with the free operation of the tool.

The result is easy-working action . . . ruggedness that stands up under the toughest kind of nut-turning . . . and flexibility that simplifies a tough job.

This is but one of many applications when "you're glad you have a Snap-on", the choice of better mechanics who want tools that help them do a better job, faster, more accurately, and with greater safety.

Snap-on tools are available through Snap-on's nationwide, direct-to-user tool service. Ask your Snap-on man — or write for new complete catalog of 4,000 Snap-on tools.

SNAP-ON TOOLS CORPORATION

8036-L 28th AVENUE

KENOSHA, WISCONSIN



Chrysler Presents "NESA" Self-Defrosting Windshield

First use by any automobile manufacturer of the newly-developed "Nesa" glass for windshields is announced by the Chrysler Division, Chrysler Corporation. By installing this type of glass in the windshield, Chrysler has produced the first electrically-operated defrosting system that is entirely independent of the car's heating system. It might properly be called a

self-defrosting windshield. At the same time the use of "Solex" glass in the windshield serves the double purpose of reducing glare and absorbing a large percentage of the heat caused by the sun's rays passing through the glass.

"Nesa" glass is the result of a war-time problem arising from electro-static charges on airplane instrument panels. This was solved by the application of an electric-conducting coating to the glass so that the static could be discharged.

Electric current to operate the defrosting system is supplied by a six-volt AC generator, with the current rectified to six volts DC to operate the complete electrical system of the car. A transformer steps this up to 110 volts AC as it passes through the windshield. Incidentally, this is the same generator employed in cars equipped with two-way radio sets.

Duggan Buys Interest In Hockaday-Phillips

L. Earle Phillips, president of Hockaday & Phillips, Inc., automotive parts jobbers, Santa Ana, Cal., announces that Tom O. Duggan, former vice-president of Thompson Products, Inc., and well known figure in the automotive industry, has purchased one-half of the common stock of the jobbing concern, which operates seven stores in Orange County. Duggan was made vice-president-secretary of the company Nov. 1.

This reunites an old team, as both Phillips and Duggan worked together many years ago for the largest automotive jobber on the Pacific Coast. Duggan will use his extensive knowledge of the automotive industry to further expand the company's business.



Tom. O. Duggan

LONG LIFE

The cost of installing bearings is always greater than the price of the bearings. Consequently, it is false economy to purchase, sell or install bearings on a price basis alone. It is much more important to consider quality first. Check the manufacturer's reputation, experience, and know-how. After all, it's the long hours of dependable operation that determines real worth.

No matter how you compare Johnson Bronze Bearings you will find them tops in every respect. For more than forty years we have remained a preferred source of supply for leading car and truck builders. There are no second or third grades of Johnson Bronze Bearings. Every item in the line is made to the same precise standards of workmanship and material demanded in new equipment.

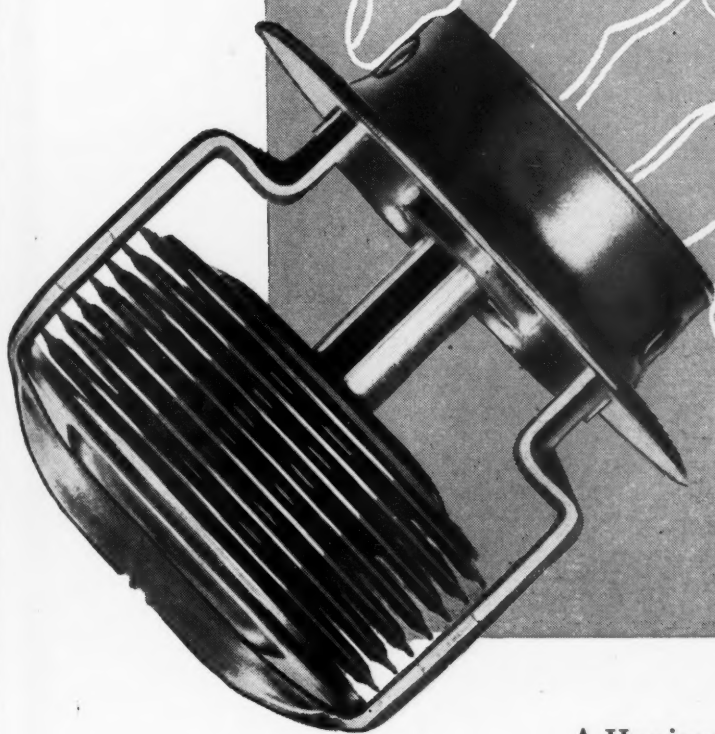
The next time you need bearings *Specify* JOHNSON BRONZE. Write for complete catalogue today.



JOHNSON SLEEVE BEARING **BRONZE** HEADQUARTERS
455 S. MILL STREET NEW CASTLE, PA.



"BOSS" OF THE COOLING SYSTEM



HARRISON
THERMOSTATS

A Harrison thermostat is a small unit with a big job!

It is absolute "boss" of the cooling system . . . sees to it that a cold engine warms up fast—and snaps into action when the temperature tries to go beyond the range of good engine efficiency.

Smart automotive service men know that the cooling system can't be *right* if the thermostat is *wrong*. They keep a stock of Harrison thermostats on hand to replace worn-out or inaccurate thermostats on customers' cars. It's a profitable business, and one that safeguards engines and makes car heaters work better.

Engineered as original equipment on America's leading cars, trucks and buses, Harrison thermostats are long-lasting, accurate, dependable. *Stock up now!*

HARRISON

HARRISON RADIATOR DIVISION
GENERAL MOTORS CORPORATION, LOCKPORT, NEW YORK

HARRISON — A UNITED MOTORS LINE

Harrison thermostats, complete radiators, radiator cores and tank parts are distributed nationally through United Motors Service.



Chevrolet Celebrates Thirty-fifth Birthday

Sales leader of the automotive industry, production giant with plant facilities stretching from coast to coast, and manufacturer with a trade-mark on more than one-fourth of all vehicles on the American highways, Chevrolet Motor Division of General Motors Corp. is 35 years old.

An industrial titan that has come

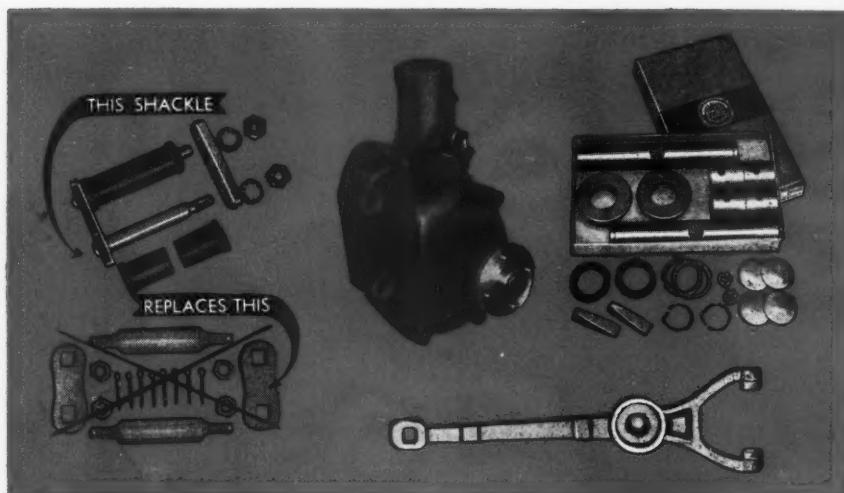
up from humble beginnings, Chevrolet at 35 years of age looks ahead under new leadership, with war-expanded production facilities, and with a dealer organization 8000 strong.

While there was no interruption of Chevrolet's concentration on producing each day as many vehicles as current conditions permit, top officials of the division did pause long enough to mark the anniversary. Nicholas Dreystadt, Chevro-

let general manager, and T. H. Keating, general sales manager, announced that the division would stage a special anniversary display in the lobby of the General Motors Building, which features one of the division's 1946 models, painted in jade, the 35th anniversary color.

An automotive "old-timer" was on hand here today to inspect the display. He is Etienne Planche, West Coast consulting engineer, and a co-worker with Louis Chevrolet in the designing and building of the first cars to bear that name. He worked with the old-time race driver in the production of the first four-cylinder model and later the first six-cylinder job, fore-runner of the current models.

A story of constant progress which has contributed a succession of important "firsts" to the industry, the Chevrolet record begins Nov. 3, 1911, when the Chevrolet Motor Company of Michigan was organized, a plant was leased in Detroit, and production was started on the first cars, offered on the market the following year. Output that first year was 2999 units, five-passenger touring models listing at \$2,150 at the factory. In 1941, Chevrolet's greatest volume year to date, 1,173,799 units were produced in a variety of body styles, including a representative line of trucks. The passenger cars retailed at about one-third the price of the 1912 models.



**Original Equipment
Quality!**

"CUSHION RIDE"
TRADE MARK REG.

RUBBER SHACKLES

- WATER PUMPS
- KING BOLT SETS
- CLUTCH FORKS

**SOLD THROUGH
JOBBERS ONLY**

— and many other fast selling items.
Write for Catalog.

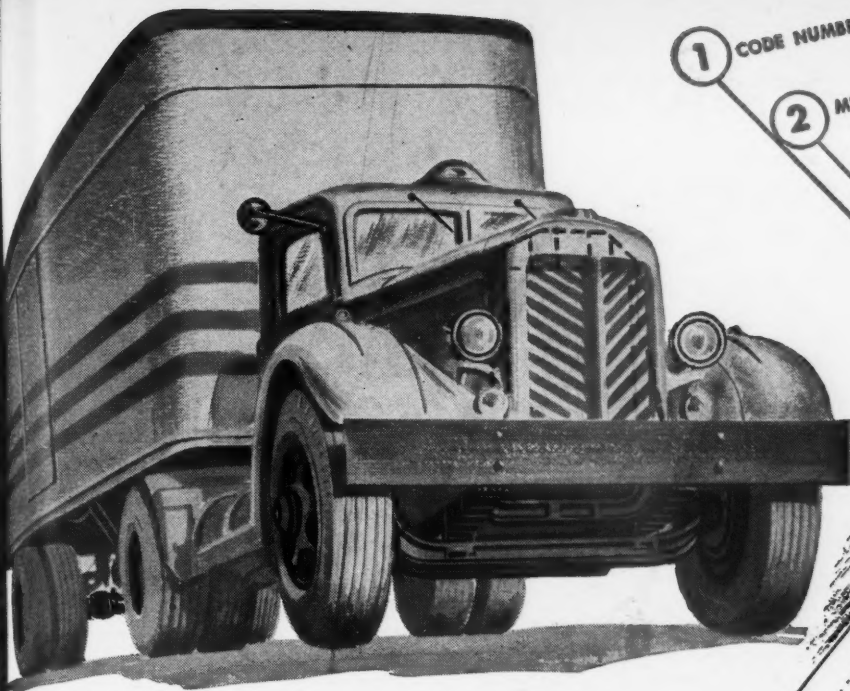
Plants at Plano and Aurora, Illinois

AUTOMOTIVE
1050 W. HUBBARD ST.

MAN'FG. CO., INC.
CHICAGO 22, ILL.

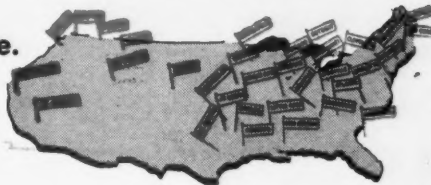


"There. That's a little more subtle."



Here's how easy it is— TO ORDER TRUCK PARTS

Make up your own list of what you want by manufacturer's part number. This will save you time.
Go to your nearest WAA Regional Office.
Ask for the Automotive Parts Section.
Examine the inventory.
Place your order.
That's how simple it is!



War Assets Administration Has a Completely Revised Inventory Every 30 Days!

Here is all the information you need to order surplus truck parts—in one compact volume. Yes, War Assets Administration has inventoried by manufacturer's part number, 11,000,000 surplus truck parts, including all makes and models *used by the armed services*.

You can tell *immediately* what we have and how much of it; who made it and the manufacturer's list price. For all this information is kept up-to-date

by means of a Perpetual Inventory record. This record is maintained by the Automotive Parts Section in each WAA office, but is centrally compiled in Detroit.

If we have what you're looking for you can place orders on the spot for prepaid shipment. Don't miss this opportunity to fill your parts requirements. *Visit, phone or write the Automotive Parts Section in your nearest WAA Regional or District Office.*

All orders are subject to existing priority regulations and to prior sale.

WAR ASSETS ADMINISTRATION

Offices located at: Atlanta • Birmingham
Boston • Charlotte • Chicago • Cincinnati
Cleveland • Dallas • Denver • Detroit
Fort Douglas, Utah • Fort Worth • Helena
Houston • Jacksonville • Kansas City, Mo.

**GOVERNMENT
OWNED
SURPLUS**

Little Rock • Los Angeles • Louisville
Minneapolis • Nashville • New Orleans
New York • Omaha • Philadelphia • Portland,
Ore. • Richmond • St. Louis • San Antonio
San Francisco • Seattle • Spokane • Tulsa

WAA POLICY ON SHORT SUPPLY ITEMS

Some parts are in limited supply. When orders for such parts are received, the parts are allocated *equitably*. You know what that means—your chance to buy is as good as the next man's, for there are no preferred "old customers." It also means you can't expect to hit the jackpot on shortage items. We'll try our best to fill your order, but the other fellow has to have his share, too.

30% of parts in *short supply* will be held to fill orders from Federal agencies. Orders from other priority claimants will be filled in the following sequence: (1) Certified Veterans of World War II; (2) Subsequent priority claimants; (3) non-priority purchasers. A reserve of 10% of parts in *normal supply* will be held to fulfill the needs of priority claimants. Veterans of World War II should apply to their nearest WAA Regional Office for certification; the actual certificate must be attached to a Veteran's offer to purchase.

EXPORTERS

Exporters are considered as wholesalers in the purchase of surplus property. Any question on export control should be referred to office of International Trade, Department of Commerce, Washington, D. C.

TRADE DISCOUNTS

(minimum sale—\$500 net)

Discount off manufacturer's list price as shown in catalogue:

Fleet Owner (5 or more vehicles) 45%
Service Garage 50%—Vehicle Dealer 55%
Manufacturer, Distributor, Exporter 75%

All orders are subject to existing priority regulations and to prior sale.

Legally Speaking

A lawyer's interpretation of federal and local court decisions of interest to repairmen and car dealers

Oral Contract Binding

Except for a few specified exceptions, an oral contract made by a repairman is just as valid, legally, as a written agreement. Of course, where the contract is put in writ-

ing, the proving of its terms is much easier and simpler than in the case of an oral agreement.

A California court made the point in a recent case, however, that where the parties intend to make a written agreement based on terms

which they have agreed upon orally, the contract cannot be enforced unless it is actually put in writing. In other words, the oral agreement on terms in such a situation is merely preliminary to the making of a final, written contract and the oral agreement is not a contract at all.

"When it is the understanding," said the California court, "that the terms of a contract are to be reduced to writing and signed by the parties, assent to its terms must be evidenced by a writing subscribed by all of them; otherwise it does not become a completed contract. When only the principal provisions of a contract are agreed upon, leaving the details and conditions to be expressed in a writing to be executed by the parties, and such writing is never signed by those to be charged with the performance of the contract, it never becomes a binding obligation upon either of them.

"If the parties contemplate a reduction to writing of their agreement before it can be considered complete, there is no contract until the writing is signed."

The practical effect of this rule of law is that if the repairman agrees with another party orally on the terms of a contract which they both contemplate is to be put in writing and signed, the other party can "run out" on the deal if the written contract is not drawn up and signed. This is because the oral terms were not intended to be

(Continued on page 120)



SCHRADER PRODUCTS + ATTRACTIVE NEW DISPLAY PACKAGES + NATIONAL ADVERTISING = TURNOVER AND PROFITS FOR YOU

Simple arithmetic that helps keep your operation on the profit side of the ledger.

Display these New Schrader Packages prominently. These eye-catchers are backed with hard-hitting advertising, in the above consumer publications,

that tells millions of readers how Schrader tire valve equipment and accessories "make tires last longer" by helping prevent underinflation that ruins tires. When you think of profits think of Schrader—order from your regular supplier today.



Tell your customers:
"Don't get caught with
your tires down—
use Schrader Products"



A. SCHRADER'S SON, BROOKLYN 17, NEW YORK
Division of Scovill Manufacturing Company, Incorporated



"Boy, was that feed line dirty!"



BARRETT SAYS:

BETTER BRAKES IN HALF THE TIME!



The Brake Dokter centralizes and grinds shoes for 100% drum contact and adjusts for proper clearance any size brake assembly from 7" to 24".



with a

BARRETT BRAKE DOKTER

...an average mechanic can make brakes factory-perfect in half the time usually required—eliminate side-pull, grabbing, chatter, squeals and diving—prevent second-adjustment comebacks—increase service output and profit.

**A DEMONSTRATION WILL PROVE IT!
ASK YOUR JOBBER**

The Brake Reliner and grinder has ample power and leverage for delining, relining, countersinking, drilling and grinding any size brake shoe.



The Brake Drum Lathe machines, grinds and hones all types and sizes of car, bus, truck and aircraft drums. Portable for field use, stationary for the shop.



WRITE FOR **FREE** BARRETT BRAKE SERVICE EQUIPMENT CATALOG

BARRETT EQUIPMENT CO.

The World's Finest Brake Service Equipment

TWENTY-FIRST AND CASS

ST. LOUIS 6, MO.

Legally Speaking

(Continued from page 118)

a contract but only the terms of a proposed written contract. If the repairman wants the deal to be binding he should see to it that the "conversation" is put on paper and signed without delay. (*Store vs. Neal*, 164 *Pacific Reporter*, second series, 38.)

Merchandise Unfit

WHAT happens when merchandise proves to be unfit for the purpose for which the customer bought it?

In an Oklahoma case the seller of certain goods sued the buyer for the unpaid purchase price and

was met with the defense that the goods were not suitable for the buyer's purpose and that, therefore, the buyer was not obliged to pay for them. In this particular case, it appeared that the buyer relied on his own judgment in selecting and ordering the merchandise.

"The record shows," said the court, "that the buyer sought out the seller and made the contract with him, and that the seller did not offer his judgment but allowed the buyer to act as he deemed best. In fact, the buyer did not contract to buy the goods until after certain tests had been made. Where one buys goods and relies upon his own judgment in buying, there is no implied warranty that the goods are suitable for the buyer's particular purpose. This is particularly so where the goods are open to inspection. (*Hyde Construction Company vs. Stevenson*, 72 *Pacific Reporter*, second series, 354.)

In this particular case the buyer could not avoid payment of the purchase price since it appeared that he had relied on his own judgment in buying the goods. Conversely, however, where a customer states the purpose for which he wants merchandise and relies upon the seller's judgment and skill in selecting the goods, the law says that the seller thereby gives a "warranty" that the goods which the customer thus buys on the seller's recommendation are fit for the cus-

(Continued on page 122)

LION

Dependable Quality

SPINDLE BOLT ASSEMBLIES



- Battery Cables and Wiring Sets
- Fuel Pumps and Parts
- Heater and Auxiliary Switches
- Piston Rings and Piston Pins
- Tools and Tool Boxes
- U Joint Journal Assembly and Kits
- Valves and Parts

... a complete line of Parts, Supplies and Accessories.

Sold Thru Jobbers

New Catalog ready soon. Write now for your copy.

LION AUTO PARTS & MFG. CO., Inc.
1920 S. MICHIGAN AVE. • CHICAGO 16, ILL.



"Now hold your temper, Jeb. Don't do anything that'll make them mad."

ELIMINATES MIXING!

"FACTORY PACKAGED" COLORS ARE
PRE-MIXED TO CAR MAKERS' "SPECS"
TO SAVE YOUR TIME!



CHECK ALL

THESE ADVANTAGES

1 Exact color match to car makers' specs!

2 Eliminates mixing time!

3 Patented pour-top can prevents waste!

4 No comebacks — no headaches!

5 Easier to handle — jobs out on time!

6 Top quality — top beauty — top durability!

7 Available Everywhere ... Call your NAPA Jobber.

MARTIN
SENOUR

The Colors You Want
Ready to Use
Easy to Use

AUTOMOTIVE
FINISHES

W-SOLIDS TYPE
SPRAYING LACQUER

The MARTIN-SENOUR CO.
2520 Quarry Street, Chicago 8, Illinois

Legally Speaking

(Continued from page 120)

tomer's intended purpose. If it turns out that the goods thus sold are not suitable, the customer is not obligated to pay for them and under some circumstances may even sue the seller for "special damages" for the failure of the merchandise to "live up to" the so-called warranty.

"Lending" an Employee

OCCASIONALLY, as an accommodation, a repairman may "lend" one of his employees to a customer or friend, to do some special job for the "borrower."

If, while doing the work desired by the borrower, the "loaned" employee injures someone, or does some damage to a third party's property—in an automobile collision, for instance—who is legally responsible as employer for the in-

jury inflicted or damage done? Must the repairman, or the borrower pay for it?

The Supreme Court of Pennsylvania in a recent case says it depends on who had the right of control over the employee at the time the damage was done. If the employee, although loaned to the borrower, continues under the repairman's power of control, the repairman is responsible for any injury done by the employee to third parties. If the borrower had the right to control the employee when the damage was done, the law will hold him responsible. In some circumstances both the repairman and the borrower may have had the right of control over the employee; in that case each of them would be liable for what he does.

"By a continuous stream of authorities," said the court, "it has been declared that where one person lends his employee to another for a special employment, the test is whether, in the particular service which he is engaged to perform, he continues liable to the direction and control of his original employer or becomes subject to that of the party to whom he is lent; the test is not whether the borrower in fact exercises control but whether he has the *right* to exercise it.

"It is also well recognized that under some circumstances, both the lender and the borrower may have control over the employee so as to render each of them liable for his conduct, for he may have been transferred to carry on work which

(Continued on page 124)



Double Feature Motor Oil for winter business

Create and hold satisfied customers by recommending AMALIE Sub-Zero for easy starting and smooth engine performance—all winter long. Flows freely when it's cold... yet clings to metal—cold or hot. It's the oilier oil!

For Winter

And for all vital lubrication points, remember AMALIE winter-grade lubricants.



SEE YOUR AMALIE DISTRIBUTOR, OR WRITE DEPT. 012

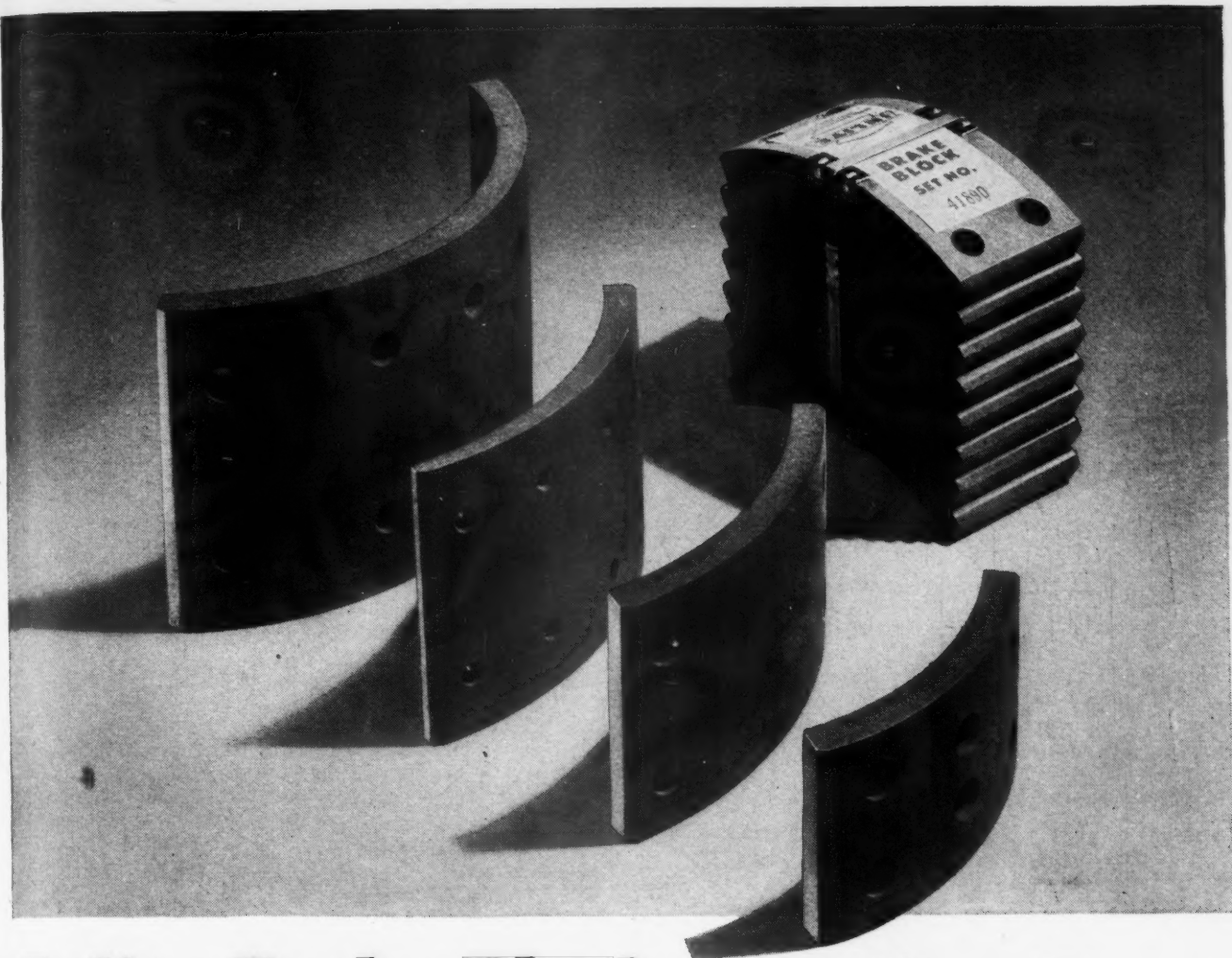
**AMALIE DIVISION
L. SONNEBORN SONS, INC.**

88 LEXINGTON AVENUE, NEW YORK 16, N. Y.

Refineries: Petrolia and Franklin, Pa.
Plant: Nutley, N. J.

In the Southwest: Sonneborn Bros., Dallas 1, Texas





Inlite Brake Block

Heavies for the Heavies

Designed for heavy duty application in air-braked busses, tractors, trucks and other extra heavy equipment—Inlite Brake Block is available in axle sets, all set for a long life of quicker, safer, straight line stops.

From its original elements to finished Block, this combination of asbestos fibers, high temperature bonding resins and carefully selected filler materials is manufactured under exacting laboratory control.

As proved by exhaustive road tests, the high quality material used throughout Inlite Brake Block creates

a uniform and adequate coefficient of friction which gives perfectly balanced brakes — quicker, more positive stops.

Moreover, Inlite Brake Block performs smoothly — quietly — while brake drum scoring and heat-checking are minimized.

Furnished in complete axle sets and sizes, Inlite Brake Block is available now through your United Motors Service Distributors. See it soon.

INLAND MANUFACTURING DIVISION
General Motors Corporation • Dayton, Ohio

★ INLITE ★

BRAKE BLOCK



Legally Speaking

(Continued from page 122)

is of mutual interest to them, and to effect their common purpose, so that his service to the one does not involve abandonment of his service to the other."

From this decision, it is clear that so long as the repairman retains any right of control over his loaned employee, he may have to

pay for any damage done by the employee to third parties or their property, even though the employee may have been doing the borrower's work at the time. (*Siidekum vs. Animal League*, 45 *Atlantic Reporter*, second series, 59.)

Fidelity Bond

FIDELITY bonds covering the honesty of employees who handle the employer's money usually

specify a limited time within which the surety company must be given notice of any dishonesty, or default by the bonded employee. Sometimes difficulty arises in determining just when the limit for giving such notification expires. If the notice is not given within a specified time, the bonding company may well maintain that it is relieved of responsibility because of the late notice. This question was raised in a recent Federal case, in which the Court said:

"The bond in this case provides that the bonding company be notified in writing within ten days after the discovery of the default, or any dishonest act of a person covered by the bond. This does not mean that it be notified in writing within ten days after the time the dishonesty was suspected, but only after discovery of any default, or any other dishonest act on the part of the person filling any position covered by the bond."

It's a wise precaution for an employer holding a Fidelity bond to read carefully the provisions concerning "notice" so that he may act within the specified time in the event of any default on the part of a bonded employee. (*Hunt vs. Fidelity and Deposit Company*, 92 *Federal Reporter*, second series, 75.)

For Low Cost Acetylene



...give me a *Sight Feed*



- Sight Feed Acetylene Generators make you independent of an outside source of supply for acetylene—generates the acetylene you need, as you use it, in your shop or factory.
- Sight Feed Acetylene Generators keep you from running out of acetylene and losing heat on the middle of a job—you see the carbide charge in the hopper and you know you have enough before you start.
- Sight Feed Acetylene Generators soon pay for themselves—and pay you extra profits for years—as you save from 50% to 75% over the cost of "bottled" acetylene.
- Stop at your jobber's store and get the facts or write for catalog 44-G.

ACETYLENE GENERATORS
FLOODLIGHTS • FLARELIGHTS

ACETYLENE
Sight Feed
GENERATORS

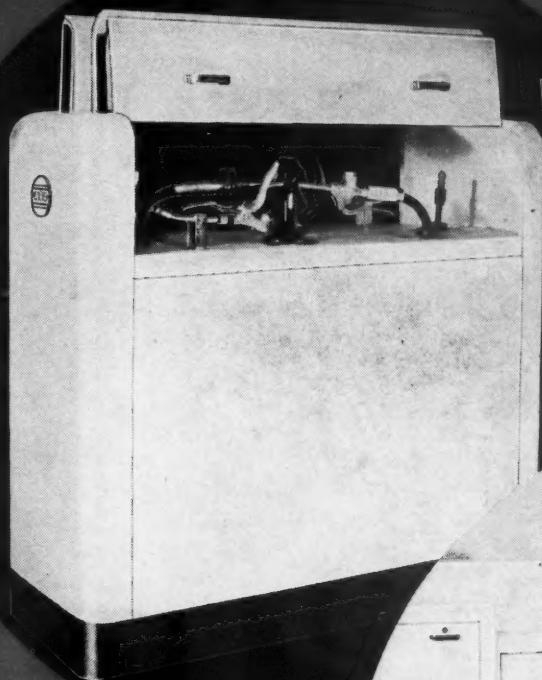
THE SIGHT FEED GENERATOR COMPANY

RICHMOND, INDIANA



"Give him the brush-off. After all he only wants to buy a car, not sell us one."

ARO CENTER ISLAND LUBRICATORS



OPEN . . .

*Ready for
Action!*

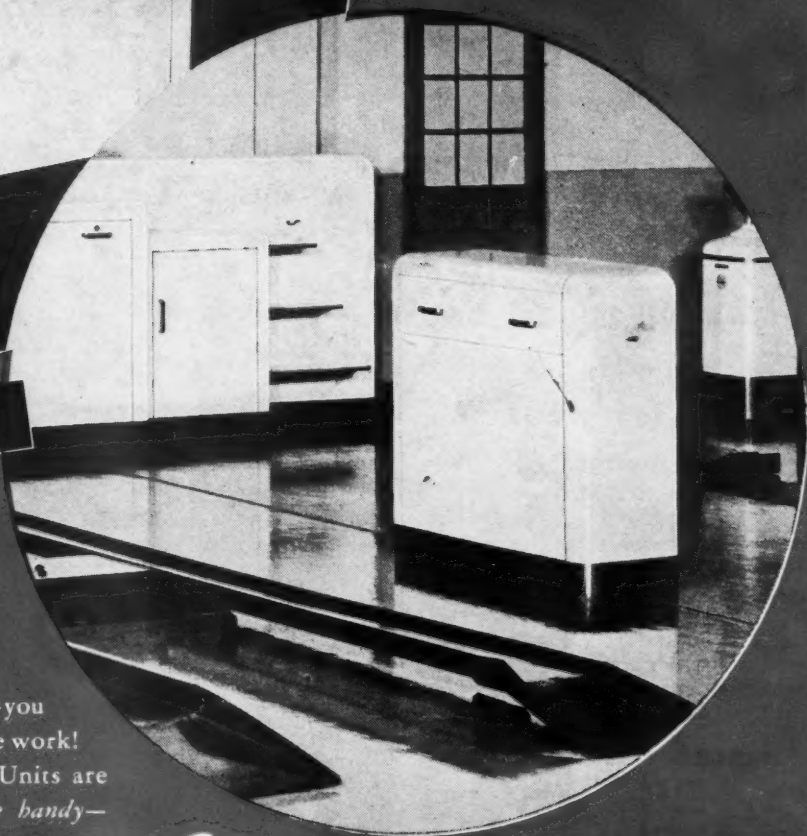
CLOSED . . .

*All service nozzles
concealed!*

Now—with all reels in easy reach—you can REAP MORE PROFIT from lube work!

These new ARO Center Island Units are doubly profitable for you! *They're handy—* save time and steps! *They're handsome—* attract business, create confidence! Easy to install—these units are adaptable to any lube layout. Unit in illustrations has 5 automatic reels, including two for chassis, two for gear and one for air. Available with any combination of reels for chassis, gear, motor oil, air and water. Automatic stops—automatic rewind.

Need equipment *now*? Get ARO-engineered Performance, Quality and Dependability! See your ARO Jobber or write The Aro Equipment Corporation, Bryan, Ohio.



New

ARO

LUBRICATING EQUIPMENT

Pop Tames a Rough Rider

(Continued from page 39)

mounting had become loose.

One by one, Tommy checked the possible causes of trouble, but everything seemed to be in good shape. The engine idled smoothly and there was no suggestion of roughness even when he raced it.

The mountings were tight and the rubber biscuits apparently had only recently been replaced.

One other possibility occurred to Tommy. He remembered a job on which vibration had been traced to a bent drive shaft. He rolled a

creeper over to the war and was letting himself down upon it when Larry walked past.

"What do you think you're doin'?" demanded Larry.

"I'm going to look at the drive shaft. It might be bent."

"Who ever told you a bent drive shaft could cause shimmy?"

"You didn't say anything about shimmy," said Tommy.

"Well, that's what the trouble is—or so Pop says. Put that crock on the front-end machine and check the caster and camber."

"Couldn't it be the springs or the shocks?"

"Sure," said Larry, "and it might be Mexican jumpin' beans in the fuel line. But we ain't got time to check everything. We gotta start where we got the best chance of locatin' the trouble. When you run into shimmy, the place to look for it—ninety-nine times out of a hundred—is the steerin' geometry. So get goin'."

"Okay, if you say so."

Tommy backed Spender's car out of the bay and was running it up on the front-end machine when Pop walked out into the shop. He waited beside the machine until Tommy climbed out of the car.

"I thought you'd have this job all buttoned up by this time," said Pop. "What's wrong?"

"Larry told me to look for vibration," said Tommy, "so I checked the engine. Then he said the trouble was shimmy. Now he wants me to go over the front end."

"Well," said Pop slowly, letting his gaze linger on the wheels, "as

(Continued on page 128)



YOU CAN INSPECT TIRES easier and faster with the new CHAR-LYNN Tire Spreader. This lightweight air powered spreader saves time and labor on every tire job...lets you do better work faster—for bigger total profits. And your customers will appreciate the more rapid, efficient service you offer them.

SIMPLE TO OPERATE! Place spreader arms between beads of casing and give handle a quarter turn. Spreader arms shoot open to spread casing a full 11". Light in wall bracket reveals defects in casing; shows up cuts, bruises and breaks at a glance.

PRICE

\$24⁸⁵

Complete with wall bracket, rollers and light socket.

BE READY!

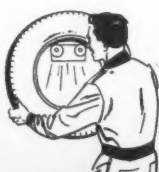
When tires are again available in quantity, be ready with a CHAR-LYNN Spreader. Helps show customers their need for new tires . . . speeds up sales. Place your order TODAY.



Wall bracket provides tire rollers and hooded light.



Remove spreader from wall bracket.



Hang tire on rollers.



Insert spreader.

THE CHAR-LYNN CO.

2851 26th AVE. S.,

MINNEAPOLIS 6, MINN.



LET'S LOOK AT THE RECORD

Average mechanic spends 25 percent of his time cleaning parts which is non-profitable. With a Circo Chief, he could clean more parts at far less cost, using but one percent of his time, thus converting 24 percent of the mechanic's time to profitable repair work.

Actual cost to operate a "Chief" degreaser including Per-Solv Solvent and electricity @ 24 KWH for one hour full capacity is but 16 cents.

By diverting a mechanic's time to productive labor sales at a minimum of \$3.00 per hour, you can save enough to pay for a "Chief" within 124 days if only one mechanic uses a "Chief" for only one hour each day.

A "Chief" will clean and dry on an average of 333 lbs. of any type of metal each and every hour it is operated.

*Cost of operation figures are based on actual tests conducted by an independent engineering concern—name on request.

Circo Chief DEGREASER

Cleans and dries

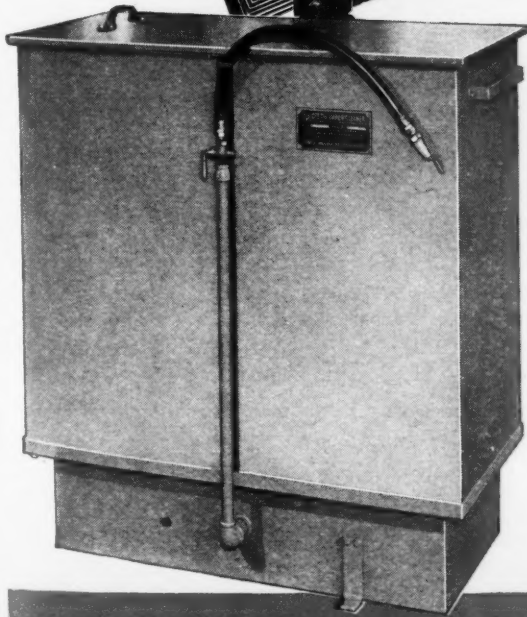
DIRTY PARTS FASTER, CLEANER AND CHEAPER THAN ANY OTHER METHOD

You can't "brush off" facts and figures covering the remarkable performance of a Circo Chief Degreaser because they prove conclusively that the "Chief" cleans and dries dirty greasy parts faster, easier, more thoroughly, more economically than any other known method. When we say faster we mean the "Chief" will thoroughly hot vapor clean and dry (automatically) dirty greasy parts in three minutes. What other parts cleaning method can match this? When it comes to economy take a look at the figures on the record book above.

It cleans parts five different ways: hot vapor cleaning (automatic) drying (automatic) spraying (automatic) dipping and soaking.

If you employ two or more mechanics we can prove to your own satisfaction that a Circo "Chief" degreaser will not only pay for itself in no time but will increase your profits on both parts cleaning and repair work.

There's a Circo parts cleaning unit to fit your particular requirements. Drop us a line and without obligation one of our representatives will show you how to obtain bigger profits on parts cleaning as well as on repair work.



CIRCO Products COMPANY

2835 CHESTER AVE. CLEVELAND 14, OHIO

Pop O'Neill

(Continued from page 126)

long as you got it on the machine, you might as well go ahead. Let me know how you make out."

Tommy checked the caster, camber and toe-in. Every measurement was according to the book. He backed the car off the machine and went to the bay where Larry was working.

"The front end's okay," he said. "Pop told me to let him know what

I found out, but I'd rather find the trouble before I bother him. Have you got any other ideas?"

"As long as Pop butted in," said Larry, "let him worry about it."

On his way to the office, Tommy resolved never to ask Larry for help again. His face reflected his mood as he entered the office. Pop looked up from the desk and said:

"No luck with the front end, eh?"

"Everything checks out just like it should," said Tommy.

Pop closed his big check book and

laid it on top of the pile of bills on the desk. "There must be some reason," he said, getting up.

"It stops me," said Tommy. "We checked about everything."

As they approached the car, Pop glanced at the wheels. "Jack up both ends and slip horses under it," he said.

Tommy soon had the wheels clear of the floor. Pop squatted at the front right wheel and started to spin it. When it stopped, he studied it and spun it again. He let it stop, and looked up at Tommy.

"There's some of your trouble," he said.

"But I don't see anything."

Pop pointed to the tire. "It stopped both times with the size mark at the bottom," he said. When a wheel always stops at the same point, it means just one thing. The wheel's out of balance." He got up stiffly. "Let's see how things are on the other side."

Squatting, he repeated the test on the left wheel. "This one is worse," he said. "No wonder Spender felt like he was ridin' a nervous bronco."

Tommy was watching Pop in open-mouthed admiration. "How did you know that was the trouble?" he asked. "Larry said the first place to look for shimmy trouble was the front end."

With a hand on the small of his back, Pop straightened up and grinned.

"In normal times," he said, "Larry would be right. But things ain't normal today. When you had the car up on the front-end ma-

(Continued on page 130)

Save COSTLY MAN HOURS! Speed REPAIR WORK!

Equip FOR SERVICE! Equip TO

CLEAN with STEAM

SIEBRING

STEAM CLEANER

OPERATES Economically!
Burns low cost commercial fuel oil or gas! Electric units also available!

Makes QUICK WORK of Tough Cleaning Jobs! Cuts Grease and Grime in a Hurry!

A big asset in any repair shop or service station! A time and money-saver. ALSO A MONEY-MAKER! The Siebring PORTABLE Steam Cleaner provides instant steam, hot water or a combination of the two UNDER PRESSURE for fast cleaning on the toughest grease and dirt packed jobs. First it knocks loose, then it dissolves and quickly removes hardest packed dirt, grease and grime. Penetrates crevices and corners. Does a BETTER job in HALF THE TIME!

LOW COST, PORTABLE UNIT for CLEANING

- and WASHING AUTOMOBILES
- AUTO MOTORS
- MOTOR PARTS
- TRUCKS
- TRACTORS
- and OTHER TOUGH JOBS!

Operates independent of city water pressure or electricity!

Easily moved about!

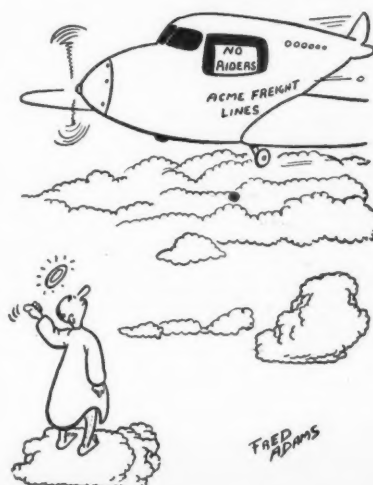


10-DAY Free TRIAL OFFER!

YOU RISK NOTHING! . . . Let us put this remarkable automatic steam cleaner in your shop for 10 DAYS' FREE TRIAL. See for yourself how simple it is to operate; how economical, safe and service free! Write for descriptive literature and details of our 10 Day "Free Trial" offer.

SIEBRING MANUFACTURING COMPANY

503 MAIN ST., GEORGE, IOWA





One of the most reliable parts of an engine is the AC Fuel Pump, heart of the fuel system. That's because it's *first quality* in design, material, and manufacture,—built to meet the engine maker's own requirements.

Serve your customers best, and protect your own reputation, by replacing worn pumps with new or factory-rebuilt AC's, and making repairs with authentic AC Parts Kits or Diaphragm Kits.

QUALITY FEATURES

- ★ Careful control of pressure and flow assuring correct fuel supply.
- ★ Accurate hardening, precision machining of parts essential to long life.
- ★ Accurate control of spring tensions and temper.
- ★ High, and controlled, pin hardness.
- ★ 4-layer, patented-impregnation diaphragms of special air-plane cloth.
- ★ Carefully finished rocker arm pads, located to center on cam.
- ★ Split-hair rocker arm clearance and control of pad hardness.
- ★ Uniform pull rod hardness at pin holes.

SEND FOR AN AC PUMP SHOP MANUAL

Field Service Department, AC Spark Plug Division, G. M. Corp.
910 Mott Foundation Building, Flint 3, Michigan

Gentlemen: Please send at once, no charge, the AC Shop Manuals checked:

| | |
|--|--|
| <input type="checkbox"/> How to Service Spark Plugs | <input type="checkbox"/> HOW TO SERVICE FUEL PUMPS |
| <input type="checkbox"/> How to Service Spark Plug Cleaner | <input type="checkbox"/> How to Service Air Cleaners |
| <input type="checkbox"/> How to Service Oil Filters | <input type="checkbox"/> How to Service Speedometers |
| <input type="checkbox"/> How to Service Ammeters and other instruments | MA-12 |

NAME

FIRM

STREET ADDRESS

CITY STATE

Pop O'Neill

(Continued from page 128)

chine I seen it had four recaps. Cal Spender drove on pre-war rubber up till a coupla weeks ago when the tubes started showin' through. And now he's run into trouble. I got suspicious."

"I never want any recaps if that's what happens."

"Lots of people ain't had no choice. And I wouldn't want to con-

demn all recap jobs. But it's pretty hard to recap a tire and still have the wheel in perfect balance.

"Some owners is puttin' up with vibration or even shimmy today without known' what's causin' it. They blame it on not keepin' roads in repair durin' the war. Or they just figure their car is gettin' ancient and expect vibration comes with old age. I've seen cars with wheels so much outa balance the tires actually kept bouncin' off the road. I hate to think what that

kind of punishment does to a tread."

"Isn't there anything they can do about it?" asked Tommy.

"A coupla things, and we're gonna do both of 'em to this car of Spender's. We're gonna switch the tires around till we get a pair on the front wheels that pretty near match as far as tread wear goes. Then we're gonna put the wheels on a wheel balancer and hang weights on 'em till they're in perfect balance."

Tommy shook his head. "You wouldn't think a shop would let a car go out with the wheels out of balance," he said. "Especially when all you have to do to find it is spin a wheel."

"Lots of owners—especially guys like Spender—don't go to a regular repair shop for recappin'," said Pop. "But you're right about unbalanced wheels bein' easy to detect. What I done was only a rough check. As soon as I can get delivery, I'm gonna have me a wheel spinner."

Tommy looked puzzled.

"It's a great machine. It's got an electric motor and a drivin' wheel to spin the car wheels at any speed you want. If Larry seen this car on a wheel spinner, he'd forget all about checkin' the front end. The way these wheels is, the car would vibrate so much it would shake the glass outa the windows."

"I guess Mr. Spender will be glad to hear that the only thing wrong with his car was unbalanced wheels."

Pop grunted. "I don't know," he said. "Cal's kind of a bookkeeper and a bookkeeper is always worryin' about balance. In fact, nobody worries half as much about it—unless it's a tight-rope walker."



SOL-SPEEDI-DRI STOPS SLIPS

There are no falls when SOL-SPEEDI-DRI . . . the white, granular oil- and grease-absorbent . . . is on the job! SOL-SPEEDI-DRI soaks up dangerous grease deposits as a blotter soaks up ink.

And it's easy to use. One man to spread SOL-SPEEDI-DRI around . . . and you've got safety underfoot! The same man to sweep it up . . . and floors are home-clean.

And with SOL-SPEEDI-DRI on the floors, the danger of fast-spreading flash-fires is reduced . . . for SOL-SPEEDI-DRI will not readily burn, even when oil-soaked. SOL-SPEEDI-DRI is the automatic, economical way to shop-safety and cleanliness.

SUPPLIERS:

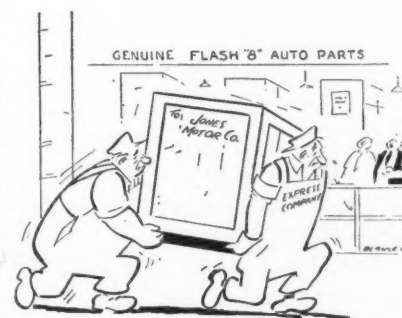
East—Safety & Maintenance Co., Inc., New York 1, N. Y.

South, Midwest & Pacific Coast—Waverly Petroleum Products Co., Philadelphia 6, Pa.

Write "SOL-SPEEDI-DRI" across your business card or letterhead and mail today for complete details, and a free, generous sample.



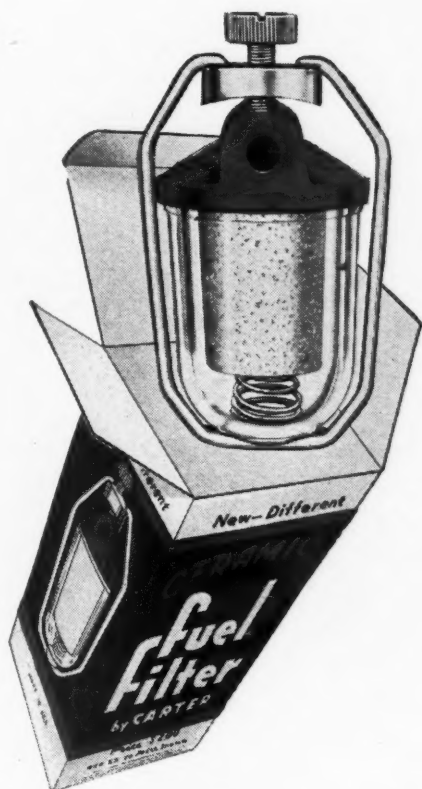
SOL-SPEEDI-DRI
OIL AND GREASE ABSORBENT



"I'm not sure but I think it's a new parts catalog."



"Show'em-Tell'em-Sell'em" a CARTER CERAMIC FUEL FILTER



The scientifically designed filtering element made of specially prepared porcelain assures a steady flow of gasoline free from dirt, lint, and other harmful matter.
Retail Price \$2.10

every time you install a new carburetor, repair or rebuild an old one, or do a tune-up job.

Your customers will thank you for providing protection against unnecessary carburetor trouble caused by dirt, lint or other foreign matter.

And your cash register will sing a song of extra profits.

Your nearest Carter distributor or jobber will be glad to show you the new sales building counter display.



CARBURETOR

TRADE MARK REG. U. S. PAT. OFF.
MARCA REGISTRADA

CARTER CARBURETOR CORPORATION

ST. LOUIS 7, MISSOURI

Division of American Car & Foundry Company

Motion Stops the Public

(Continued from page 40)

Empire Chevrolet, one of the most modern sales outlets for cars in the New York area, was completed. Its Hollywood interior and World's Fair exterior are brain-children of Kaufman himself. He considers every man, woman and child who passes his gleaming glass and tile

building as a potential customer, and, in his words, "You've got to stop 'em to sell 'em!"

Kaufman got his theories on merchandising and display from years in radio and used car selling. He measures the effectiveness of every purchase by its own earning power.

The entire building, covering 200,000 sq. ft., reflects Kaufman's theory that "display will pay." The interior shines with glass and mirrors. Separate offices have been set up to accommodate clients privately. The building is completely air conditioned, and a public-address system reaches every corner—offices, machine shop and showroom.

A heavy electric sign cresting the corner show-window flashes colored letters **EMPIRE CHEVROLET** into the night. The interior walls of the showroom frame three floor-to-ceiling tinted photo murals showing the development of motor transportation.

Remembering the days of competitive selling in '39, Kaufman has established a business that bespeaks his faith in the automotive industry. "I'm equipped to handle more than 2000 cars in 1947," he said, "and I will rely on *motion* to attract the customers to buy them."

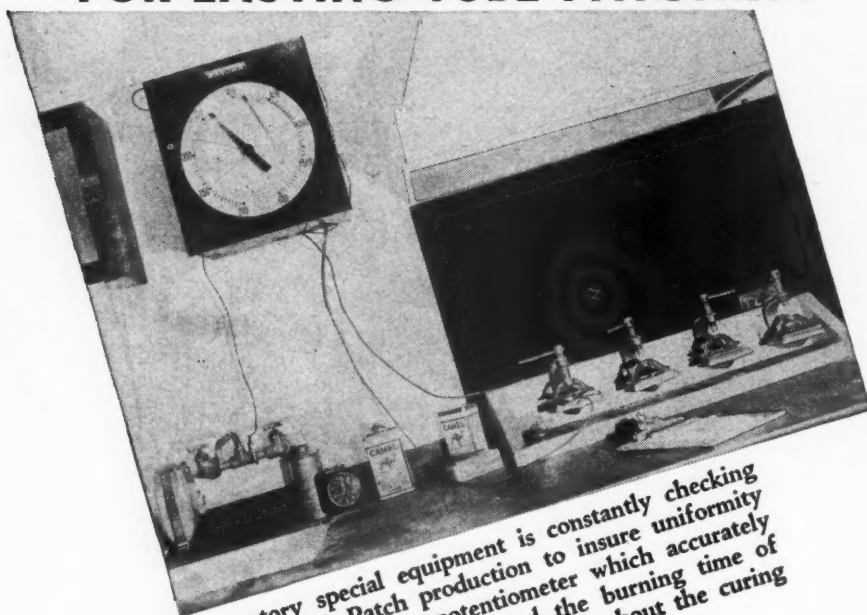
The De Soto Suburban

(Continued from page 48)

natural wood graining is used on door panels, posts and the luggage compartment. The exterior is finished in a metallic enamel of the polychromatic type.

Oversize brakes, rear springs and tires are used, but the engine, fluid drive, automatic transmission and other mechanical units are the standard DeSoto equipment. Manufacturing economies are possible because the body panels are the same as those used on the DeSoto taxicab.

HEAT CONTROL FOR LASTING TUBE PATCHING



In the Egan laboratory special equipment is constantly checking various stages of CAMEL Patch production to insure uniformity of all ingredients. Above is the potentiometer which accurately records the flash heat, the heat curve and the burning time of CAMEL heat elements. There is no guesswork about the curing ability packed into a CAMEL vulcanizing patch.

By making CAMEL Patches from raw materials, each can be carefully balanced to give the true and lasting tube repair which makes CAMEL the patch-word of the automotive industry. CAMEL Patches are made better and packaged better to repair longest.





Look for the familiar CAMEL package anywhere!

CAMEL Patches

H. B. Egan Manufacturing Company, Muskogee, Oklahoma

In Canada: GEORGE M. WATSON & CO., Ltd. Toronto, 2

Other CAMEL Products available in the complete line are: Quick Cure Gum, Tube Repair Kits, Garage-size Kits, Vulcanizing Cement, Rubber Cement, Tire Patch Cement, Vulcanizing Kits, and Valve Stem Heat Units.



Eye-catching beauty
to win a waiting market...

The New Guide *Spotlamp*



Just display this new Guide spotlamp in a prominent place, and watch your customers eye its clean, modern lines . . . its gleaming, richly-chromed body . . . its smart plastic handle with the built-in switch! Explain how the monogrammed bulb cap, the precision-made, silver-plated brass reflector and the highly polished bent glass lens assure a dependable, powerful beam. Then point out how easily and completely it is controlled from inside the car. You'll find that with

just a little help, this spotlamp almost sells itself!

The new Guide spotlamp is built for *lasting service*. All exposed parts are made of non-rusting materials and are chrome-plated to provide *lasting beauty*. When you sell it, you're selling a *quality product*, the newest addition to the nationally known, fast-moving Guide line.

Ask your United Motors distributor about this completely *new spotlamp*!

SAFE HEADLAMPS ARE "CORRECTLY AIMED" HEADLAMPS—
CHECK YOUR CUSTOMERS' HEADLAMPS TODAY



GUIDE LAMP—A UNITED MOTORS LINE

The new Guide spotlamp and Guide lamp service parts are sold nationally by United Motors Service distributors.

Guide LAMP

Division of General Motors
Anderson, Indiana

Statistics to Be Part Of Union Raise Strategy

The voluminous compilation of statistics and economic data which the union used to support its claims in the General Motors strike last year are a part of recorded industrial history, but they are not a dead issue. That the so-called "facts" proved to be largely phony conjectures has not deterred the union from resorting again to gov-

ernment figures which purport to show that profits in the first half of 1946 were more than double those of the same period the year before. Frank Rising, general manager of the Automotive and Aviation Parts Mfgs. Assn., comments that UAW-CIO spokesmen are not likely to mention that the businesses used to head the profit increase report are retail trade, motion pictures, radio broadcasting, alcoholic beverages, and wearing

apparel, and that the same report shows a decrease in reported profits for iron and steel, industrial machinery, motor vehicle parts and accessories, electrical machinery, and other metal-working trades. Neither are they likely to point out that in the manufacturing field about half the employees received wage increases of from 5 to 18 cents an hour since V-J day, 23.4 per cent received 18 to 25 cents an hour more, and 24 per cent got no raise at all or less than 5 cents an hour. In non-manufacturing, on the other hand, nearly half received no pay increase, and another 30 per cent were boosted less than 10 cents an hour. As a result, Rising pointed out, the limited number of persons in the favored group could not purchase "mass volume" of the goods they produce, and the greater part of the unfavored "mass purchasing" market can't afford to pay the high prices stemming from higher labor costs.

VITAL

...to complete
cooling system care

Warner
RADIATOR CLEANER
REMOVES SCALE, RUST, GREASE

Warner
LIQUID SOLDER
Non-metallic, deposits
tiny fibers to repair leaks

Warner
COOLING SYSTEM
PROTECTOR
Prevents rust, corrosion

Warner
SERVICE CLEANER
For heavy-duty engines

A FAMOUS NAME IN AUTOMOBILE HISTORY

Standard of protection
for more than 25 years

Write for FREE booklet
on cooling system care

WARNER-PATTERSON COMPANY • 920 S. MICHIGAN AVENUE, CHICAGO 5, ILLINOIS

Bearing Resizer

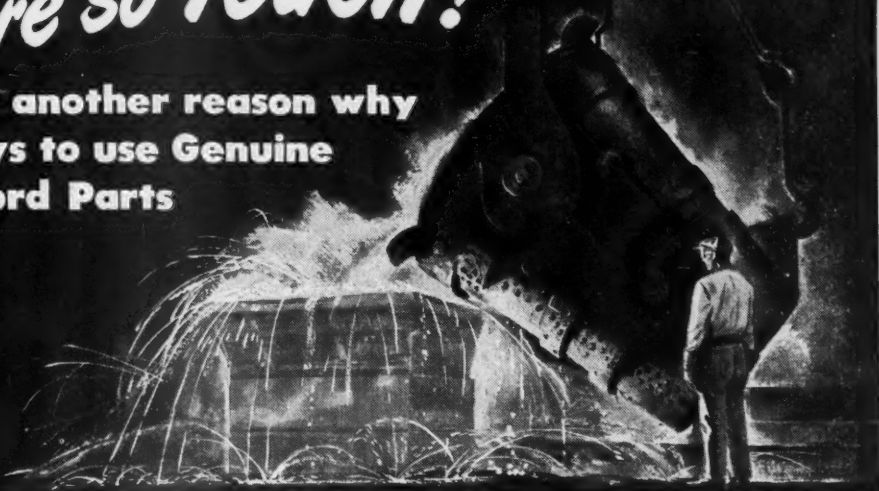
Southwestern Development Company, Los Angeles, California, is now manufacturing a bearing boring machine called "the Hydro-Borer Model C4-FHB." Designed for use in motor rebuilding shops, this bearing resizing machine bores and faces insert and flange bearings with the aid of cast iron support sleeves. The feed is hydraulic, and the calibrated eccentric boring head permits advance in bore diameter up to .014 in. without resetting the tools.



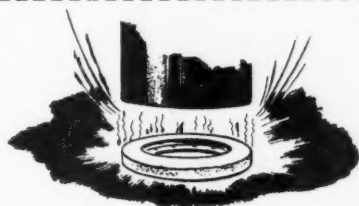
"What a dope! He wonders what love is . . . a noun or a verb."

Why Genuine Ford Gears are so TOUGH!

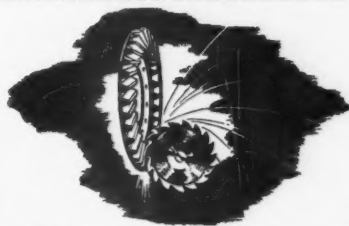
... or another reason why it pays to use Genuine Ford Parts



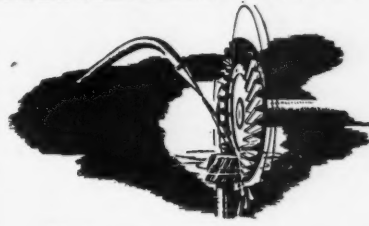
Yeah, . . . I'm a tough gear . . . and as accurate as they come. But you should see what I went through to get this way. First, all my alloys were fused into the specified Ford steel . . . and gee, was it hot! But I stuck it out and pretty soon was ready for the forge!



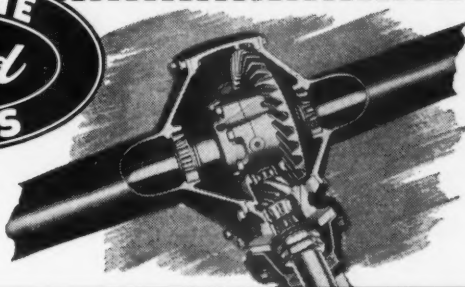
2 Now, being forged into a gear blank by twelve 2500-pound blows isn't funny! But they hammered my grain structure parallel to my tooth plates and that made me mighty strong . . . so I forgave them for the beating I took.



3 Then, I got myself a set of teeth that are really beauties . . . accurate as a gnat's whiskers. And I was carefully hardened so my teeth have a super-hard surface while my inner core remains tough and flexible to withstand shock.



4 Finally, I met my mate, Miss Pinion Gear. We've been together ever since. Our teeth were lapped together in a special machine so each fits the other's precisely . . . that's why we run together so quietly—and will last longer.



5 During the manufacture of Genuine Ford Gears, many quality tests are made . . . teeth are put under pressures up to 200,000 pounds per square inch to determine tensile strength . . . gears are etched with concentrated acid to study grain structure and depth of surface hardness. All of this is typical of the care that goes into the manufacture of Genuine Ford Parts . . . and explains why Genuine Ford Parts are . . . Made Right . . . Fit Right . . . Last Longer!

F O R D M O T O R C O M P A N Y

DuPont Presents Another Industrial Adhesive

A new industrial adhesive that requires no catalyst or special preparation for use has been announced by duPont. Described as being tough and flexible, this preparation, known as "No. 4665 Cement," is suitable for bonding metal foils and metal sheets to wood, plastics, vulcanized synthetic and natural rubbers, as well as other substances having widely different coefficients

of thermal expansion. Said to have six months' minimum package stability, with no tendency to gel inside of a year, the new cement can be applied, without thinning, by brushing, roller coating, knife coating or dipping. It is resistant to dilute alkalis, acids, corrosive salt solutions, mildew and fungus. It is not attacked by petroleum or coal tar solvents, lubricating oils, alcohols, ethylene glycol or organic oils, but is soluble in ketones or ester solvents.

Hopkins Promoted By Purolator

In a joint announcement by Ralph R. Leyte, president, and John M. Clarke, vice-president, of Purolator Products, Inc., Howard J. Hopkins was named general sales manager of the After-Market Division.



H. J. Hopkins

Mr. Hopkins began his business career 22

years ago in the engineering department of Purolator Products, Inc., manufacturers of Filters for automotive, aviation, marine and industrial applications. Later he was appointed a district manager and, during the course of the years has headed various districts comprising about three-quarters of the United States. Because of his engineering and technical experience, Mr. Hopkins was selected to represent his company in Washington throughout the war.

After the end of the war, Mr. Hopkins returned to the company's headquarters in Newark and was appointed Eastern Divisional Sales Manager, a post in which he served until his present promotion. He has been closely associated with the automotive distributing field for the past 18 years and has an intimate acquaintance with the jobbers and their merchandising problems.

Central Mike Says:
**"EVERY MECHANIC NEEDS
THESE TWO SETS"**



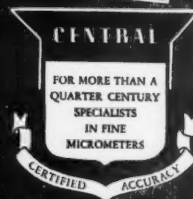
SET NO. 808 \$12.00
INSIDE MICROMETERS
Range 1½ to 8 inches.
Complete with Extension Handle
and DeLuxe Plush-Lined Case

SET NO. 745 RL \$46.50
OUTSIDE MICROMETERS
Range 0 to 4 inches.
Complete with Ratchet Stops, Lock
Nuts, Standard Test Gauges and
DeLuxe Hinged Plush-Lined Case



WRITE FOR CATALOG NO. 17
The entire line of individual micrometers and sets fully illustrated.

THE CENTRAL TOOL CO., AUBURN, RHODE ISLAND





AUTOMOTIVE AIRLINE EQUIPMENT

GEARED FOR FAST SERVICE!!

The worm has turned, today the motorist is in the driver's seat, demanding fast service and you must give it to him if you expect to hold his business. Hansen automatic equipment is designed and engineered for the modern service station and car dealer and has been widely used and accepted by the trade for a quarter of a century. The Hansen Automotive Airline Equipment will enable you to render better and faster service and produce a more thorough job at less cost in less time.

Send for free Automotive Catalog.



HANSEN JET OILERS

HANSEN JET OILERS are compact, easy to handle and manually operated. They project a solid jet of light or penetrating oil when plunger is depressed. All pump parts are enclosed in the handle, fully protected. Oil container has one quart capacity.



HANSEN AIR HOSE COUPLINGS

HANSEN AIR HOSE COUPLINGS are extensively used around service stations because of their simplicity, ease of operation and long life. Can be used outdoors as well as indoors as all parts are fully protected.



HANSEN SAND BLAST CLEANERS

HANSEN SAND-BLAST CLEANERS are an ideal unit for removing old paint, rust, carbon etc., and for cleaning parts for welding and soldering.

HANSEN MFG. CO.

1786 EAST 27th STREET
CLEVELAND 14, OHIO

Her Cabana Ensemble

custom-styled by Frances Sider

The Motor Oil

for her car . . . custom-made
by VALVOLINE



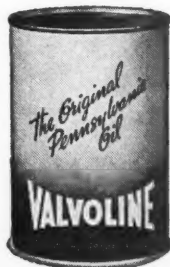
Because we carefully maintain custom quality standards in making Valvoline Motor Oil, it can be made only in limited quantity. But Valvoline is available to the select group of motorists who expect better than average performance and who like to give their cars more than the usual protection. You will find Valvoline at one or more of the better dealers in your community.

VALVOLINE

The Original Pennsylvania Motor Oil

Unconditionally Guaranteed

Freedom-Valvoline Oil Company, Dept. 12L Freedom, Pa.
New York, Toronto, Pittsburgh, Detroit, Atlanta, Cincinnati, Chicago,
St. Louis, Los Angeles, San Francisco, Portland, Seattle, Vancouver
Refineries at Butler; Freedom, Pennsylvania



Price Discrimination

If a repairman believes that he is being victimized by price discrimination in violation of the Robinson-Patman Act, he can set an investigation in motion by writing his complaint to the Federal Trade Commission at Washington.

Just how the Commission handles such complaints was explained in a letter written by one of the Commissioners.

"Under the Commission's procedure," he said, "anyone may bring to its attention an alleged violation of any of the laws in which the Commission has jurisdiction. Preferably, such information should be in writing and should contain a clear statement of the facts. This information is kept confidential.

"This is known as an informal complaint and is referred to a member of the Chief Examiner's division for an independent investigation of the material facts. In this type of investigation, the party complained against is also interviewed and given an opportunity to make explanations regarding his alleged violation of the law. If, upon the facts disclosed by the Commission's investigation, it appears that there is reasonable ground to believe that the law is being violated, the Commission issues a formal complaint setting forth in detail the charges involved in the case. The person or concern complained against is given a reasonable time to make answer.

"If the Commission finds that the law has been violated, it issues an order requiring the respondent to cease and desist from the illegal practices.

"The Commission has undertaken to assist those who are affected by the Robinson-Patman Act and in this connection members of the Commission and its staff have held conferences with hundreds of individuals seeking an understanding of the Act as it affects their business. Many thousands of responsive letters have been prepared in response to inquiries. As a result of such efforts large numbers of business men and in several instances whole industries have revised their practices to comply with the letter and spirit of the Robinson-Patman Act."

Outstanding! THE NEW DELCO RADIO *Combination*



A special lightweight tone arm increases the life of records. Here is a record changer of exceptional quality. This changer has a capacity of ten 12-inch or fourteen 10-inch records, and has an automatic shut-off after playing the last record.

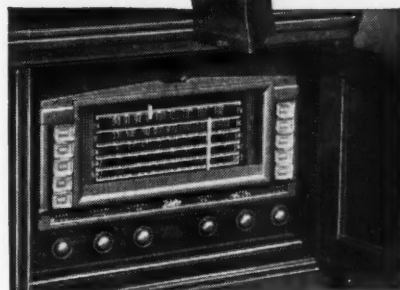
HERE'S something special for those customers who demand the best—a superb new A-M and F-M radio combination.

While this newly designed set, with its 14 tubes plus rectifier and its 15-inch speaker, is engineered to receive the finest in F-M, it also provides exceptional reception on standard broadcast and three short-wave bands. It's available in two cabinet finishes: walnut (Model R-1251) and mahogany (Model R-1252).

The grace and distinction of its lines—the expert craftsmanship of its cabinet work—match the advanced engineering and acoustical qualities that account for its thrilling performance!

This new combination joins the Delco portable and table models in bringing you *the best of all that's new in radio*. Every Delco radio is worthy of the famous name it bears. United Motors Service, Division of General Motors Corporation, Detroit 2, Michigan.

If you have to wait . . . If your distributor is unable to fill your orders for Delco radios promptly, don't blame him. The fact is that shortages of materials and component parts still cause factory shipments to fall behind orders, in spite of everything we're doing to speed production. However, more and more Delco radios are being made, and soon we hope to be able to satisfy everybody's demand.



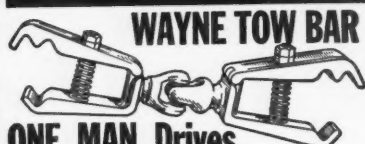
NEW! Automatic push-button tuning on the F-M band as well as on the standard broadcast bands. This is an innovation in push-button tuning—a feature of this outstanding new Delco Radio Combination.



DELCO RADIO A GENERAL MOTORS PRODUCT

Delco radios are distributed nationally by United Motors Service. See your United Motors distributor about the Delco radio line.

These New Items **SAVE** ✓ Time ✓ Work ✓ Money

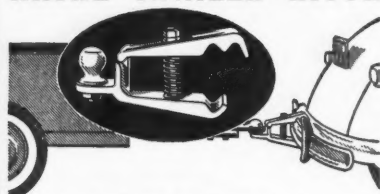


ONE MAN Drives, Tows and Steers Both Cars

- Attaches to any bumper, center or off center, including knee-action models.
- Towed car follows perfectly over any road, around corners, cannot swing out in traffic. Absolutely safe.
- Steering wheel of towed car remains unlocked and unattended. Ideal for 4-wheel trailers.
- Slickest thing you ever saw! Your money back if not satisfied.

ORDER DIRECT ...
ONLY \$17.45
F.O.B. Factory
Retail at \$25.95

WAYNE TRAILER HITCH



Fits all 2 and 4-wheel trailers. Use it on any car or truck bumper, or tractor. Can be used with or without ball joint. Just unscrew ball joint and use pin or bolt. All steel, guaranteed. If bent or broken, we will replace Free.

ORDER DIRECT ...
ONLY \$7.50
F.O.B. Factory
Retail at \$9.95

HANDY ANDY SCOOTER



MANY USES IN
GARAGES . . . HOMES
. . . SERVICE STATIONS

Move your tools without lifting them! Makes handy seat or parts rest. All-steel electric-welded utility drawer. Strong . . . withstands 1,000 pounds. Size 10"x12"x11" high.

ORDER DIRECT ...
ONLY \$5.95
F.O.B. Factory
Retail at \$7.95

CAMPBELL'S GARAGE CAR HEATER



For easy winter starting. Save cars' battery and motor. Plug in any light socket. Place under hood.

ORDER DIRECT ...
ONLY \$5.95
F.O.B. Factory
Retail at \$8.95

WAYNE HUB CAP REMOVER

SAVES
TIME!



One flip of handle and hub cap is off! Prevents battering hub caps and chipping wheel paint. Heavy steel, rust proofed. Retail at \$1.25. GUARANTEED.

Lots or six — \$4.50, F.O.B. Factory

SEND IN YOUR ORDER TODAY
H. D. CAMPBELL CO.
357 6th St., Rochelle, Illinois



SIRIUS, the "Dog Star," is the brightest of all stars. A mighty furnace of glowing red fire. Almost 2½ times larger than our own sun, and 28 times more brilliant. And a mere matter of 51 million million miles distant from the Earth.

**BRAKE PARTS
BRAKE CABLES
BRAKE TOOLS
BRAKE FLUID**



THE LINE OF
DEPENDABLE
SERVICE

CLOSER to home than Sirius is that great "star," the EIS Line, for 15 years a bright spot in the automotive firmament—and a recognized "star performer" in the field of brake repair.

Replace with EIS Brake Parts and insure against the grief that often follows the use of brake parts of unknown origin and doubtful quality.

From your jobber. Write us for particulars.

THE EIS AUTOMOTIVE CORP.
Middletown, Conn.



"Don't break the tie—we get overtime for extra innings."



**FOR
SAFETY**
*on ice and
snow!*

Campbell Lug-Reinforced Tire Chains



The exclusive, patented* saw-toothed lugs of Campbell Lug-Reinforced Tire Chains cut right into ice and snow for the grip that assures positive traction—safe starts and stops without dangerous slip and skid. What's more, tough, hard-wearing steel, and one-piece construction, mean increased chain mileage. International Chain & Mfg. Company, York, Pennsylvania.

CAMPBELL

Lug-Reinforced
TIRE CHAINS

THE CHAIN WITH THE SAW-TOOTH GRIP



*U. S. Pat. No. 2,093,547—Canadian Pat. No. 223,568

It's Good SERVICE...

to Suggest a

DOLE

REPLACEMENT
THERMOSTAT
AS PART OF EVERY
MOTOR TUNE-UP



You do your customer a favor—at a profit to yourself—every time you sell the idea that thermostat replacement contributes to improved performance. It means important savings in gas, oil and motor wear.

Only a Dole Thermostat can be set for variations in seasonal conditions and types of anti-freeze. Replacement is simple. Remember, every car needs a new thermostat at regular intervals for top performance.


THE DOLE VALVE COMPANY

1901-1941 Carroll Avenue

Chicago 12, Illinois

Representatives in Principal Cities

VAN EXCHANGES SINCE 1919



- STARTER DRIVES
- FUEL PUMPS
- DISTRIBUTORS
- UNIVERSAL JOINTS
- SHOCK ABSORBERS
- CURRENT REGULATORS
- WINDSHIELD WIPER MOTORS

Franchise Dealers: Write Dept. MA about your Used Parts

VAN BERGEN & GREENER, INC.
1619 N. Hoyne Ave., Chicago 47, Ill.

356 Venable N.W. 2727 Oak St. 2308 N. 15th St.
ATLANTA KANSAS CITY PHILADELPHIA



Smash-Proof
CREEPERS

Sold by all leading jobbers
HULBERT MANUFACTURING CO.
Ashtabula, O.



... For Faster and
More Accurate
BATTERY TESTING

IMPERIAL "K"
No. 515-T
BATTERY HYDROMETER

- ★ Thermometer Type
- ★ Shatterproof Glass Jar

ORDER FROM YOUR JOBBER

THE IMPERIAL BRASS MFG. CO.
1217 W. Harrison St. Chicago 7, Ill.

KEN TIRE TOOLS
REG. U. S. PAT. OFF.



LEAD THE FIELD
ADVANCED DESIGN
QUALITY UNSURPASSED
SEE YOUR LOCAL JOBBER OR WRITE FOR LITERATURE

KEN TOOL MFG. CO.
PATENTED

Order
Lub-a-Spray



GENUINE GRAPHITOID LUBRICANT

PANEF MANUFACTURING CO.
MILWAUKEE 1, WISCONSIN

KEEP OIL FREE FROM ABRASIVES

KEEP IT CLEAN WITH

PUROLATOR
THE OIL FILTER



PUROLATOR PRODUCTS, INC.
Newark 2, N. J.

Founder and leader of the oil filter industry

Kaiser-Frazer Features No-Draft Ventilation

A peacetime modification of the ventilation system perfected for high-flying B-29's will afford passengers in the 1947 Kaiser Specials and Frazers a new high in draft and dustproof riding comfort, according to the manufacturer.

Now coming off the assembly line at the companies' Willow Run plant, the cars are designed with air intakes on the under side of the front fenders behind the grilles, Norman Schassberger, chief body engineer explains. When the vehicles are in motion, fresh air is constantly being forced through these screened openings, down fender ducts and into the passenger compartment.

As the air pressure inside the cars remains greater than the air trying to enter, drafts and dust are cut to a minimum.

The ventilator openings are operated manually from a control on the instrument panels.

Classified Advertisement

LIGHT PLANT PARTS. Electric pumps; farm batteries; parts for Delco and Westinghouse. Republic Electric Company, Davenport, Iowa.

WORLD WIDE

Genuine WELLS Ignition

USE PROVED IGNITION PARTS

QUALITY TELLS DEMAND WELLS

WELLS MFG. CORPORATION
FOND DU LAC, WIS.

HYDRAULIC BRAKE CYLINDER CLEANER AND POLISHER



Pat. No. 2348132

Muck and scale quickly removed and brake cylinder polished to a mirror finish in a few seconds. Eliminates wasteful outside trips. Does the entire job in your own shop.
\$3.25 FROM YOUR JOBBER

THE HYLAND MANUFACTURING COMPANY
818 John Street Portsmouth, Ohio

You Can Rely On

FRENCHTOWN INSULATORS

Used by more spark plug manufacturers than any other.

FRENCHTOWN PORCELAIN CO.
81 Mulrhead Ave., Trenton, N. J.
(Factory: Frenchtown, N. J.)

ignition-fritz

For Auto Owners, Mechanics, Truck Drivers, Farmers and all gasoline engine users. Sells on sight.

LITTELFUSE Incorporated

4757 N. RAVENSWOOD AVE., CHICAGO 40, U. S. A.

Shurhit

Triple Seal Moisture-Proof
CONDENSERS



Ask your Shurhit jobber or write us for details on these super-quality replacement parts. Complete Shurhit line includes Condensers, Contact Points, Rotors, Caps, Coils, Brushes, Cut-Outs, Switches, and Spark Plugs.

SHURHIT PRODUCTS, INC.
Waukegan, Ill.

QUIETER STRONGER SELF-CLEANING



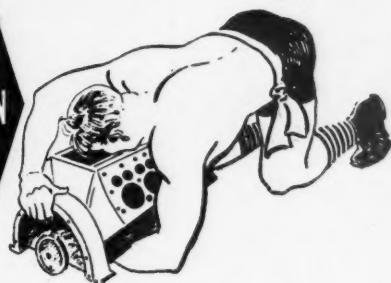
You'll make more muffler profits with Pratt! Ask your jobber now!

PRATT
Spiral MUFFLERS

Pratt Industries, Inc. • Frankfort, N. Y.
In Canada: PRATT CHUCK CO. Ltd. • Toronto, Ont.

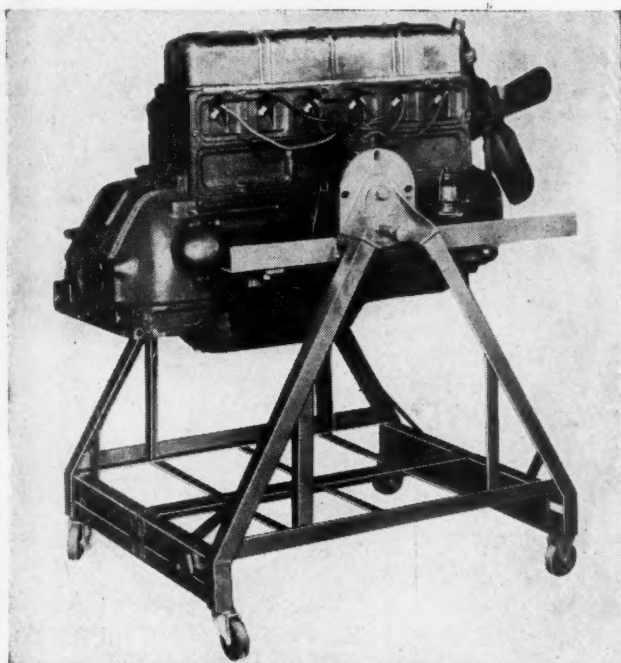
(Advertisement)

**YOU CAN'T WIN
WRESTLING AN
ENGINE BLOCK!**



**BUT—You Can Win with This
New Universal Engine Overhaul Stand
... Performs Every Operation Without
Removing Block from Stand**

This Clayborne Universal Model 201 Engine Overhaul Stand makes possible production line efficiency in every shop, no matter how small . . . increases production and lowers cost on every operation. Eliminates all handling of motor block during rebuilding. Entire block can be revolved for complete accessibility at all times for grinding seats, cutting valve clearance, etc. All parts can be replaced on motor ready to return to the chassis. Sturdily constructed. Completely mobile. Safe and easy to operate. Block may be steam cleaned on stand.



Chevrolet Engine mounted on Clayborne New Style Universal Stand Model 201.

The Clayborne Universal Model 201 Engine Overhaul Stand handles all in-line automotive engines to approximately 600 lbs. This stand readily handles the complete engine including oil pan, clutch housing and accessories. The special quick mounting clamps which grip engine pan rails are a special feature of this highly developed stand.

SEE YOUR JOBBER—OR WRITE TO—

CLAYBORNE MANUFACTURING CO.
209 S. LA SALLE ST., CHICAGO 4, ILL.



**Variable Speed Drive Attachment Offers
Instant Speed Control for Drill Press Work!**

Now you can adjust drill press speeds from high to low—or any intermediate speed—as easily as shifting gears in your car! The Era Variable Speed Drive Attachment enables the operator to provide the correct speed for large or small drills by merely moving a lever. This saving in time results in greater work volume, better work, and lower production cost.

The Era Attachment fits all popular makes of drill presses, and is easily installed without the necessity of drilling holes or changing present equipment.

To also help save time on the job, many plant owners make chewing gum available to workers. Chewing gum seems to make work go easier, time go faster. Wrigley's Spearmint Gum may be used even when both hands are busy, eliminating work interruptions, and thus promoting greater safety for the operator.

*You can get complete information from
Era Meter Co.
3940 N. Kilpatrick Ave., Chicago 41, Ill.*



Era Variable Speed Drive



AA-204

Make BODY SOLDERING Faster... Easier

with a
BINGO SOLDER KIT



Just slip a Bingo Solder Tip assembly, using the Bingo No. 2 tip, over the tip of your welding torch and you're ready to do a fast job of body soldering. Use of the No. 1 tip quickly converts the Kit for light soldering. Uses Acetylene Only.

COMPLETE KIT
Consisting of body
and two tips. } **\$275**

JOBBERS! Write for complete merchandising plan.

BEAVERDELL
Company
817 Webster Avenue, Chicago 14, Illinois

Season's ☆
☆ Greetings
TO OUR MANY GOOD
FRIENDS and CUSTOMERS

McAleer
MANUFACTURING CO.
Rochester, Mich.

CORDS PISTON RINGS

The Modern Way!

**ENGINEERED
PISTON RING SETS**



*Sealed
IN PACKAGES*

New scientifically designed, precision made, Thermo-Formed Cords Piston Rings now available for all motor vehicles. Exclusive patented Concave Steel Segment Rings in Cords combination sets stop cylinder wear—save gas and oil

There are **CORDS** for every car
Every car needs **CORDS**

CORDS

PISTON RING MANUFACTURING CO.
371 EIGHTH AVENUE • SAN DIEGO, CALIFORNIA

SPRINGS



SERVICE SPRING COMPANY
INDIANAPOLIS 6, INDIANA

Preventing Horn Ring Rattle on Pontiac

Pontiac in a recent bulletin gives some hints on horn buttons. If the horn ring should rattle it is probably due to the sponge rubber separator taking a permanent set that allows the ring to drop down almost to the point where the horn would blow without being touched. It is then necessary to install a new separator. If the horn fails to operate, it is due to misalignment of the pilot hole in the horn ring hub. The remedy is the installation of two metal plates available from Pontiac under part No. 509533.



"Now for our regular evening debate
—You'll champion the negative, as usual?"



They Can't Drive Without TIRES!

New Tires are still hard-to-get! Keep your customers' cars running with KEX Tire Plugs —They are the quickest, permanent method for sealing punctured casings at lowest cost. Wholesalers sell KEX.

The WEDLER-SHUFORD CO.
2222 Olive St., St. Louis 3, Mo.

FOR AUTOMOTIVE PARTS
AND SUPPLIES...

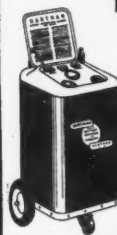
*Your NAPA Jobber
is a Good Man to Know!*



NAPA
Is the Largest
Independent Organization
In the Parts Industry

INVEST IN THE BEST...

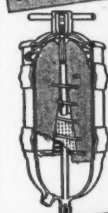
HARTMAN HR-53-2 RAPID BATTERY CHARGER AND ANALYZER



Cooler 100-ampere heavy-duty, self-healing rectifier—individual cell-test meters—single-unit precision adjustment multi-circuit tap switch cast bronze, insulated, current-saving battery clamps—heavy-duty 200-ampere cell-test and desulphation discharge unit—massive, waist-high, beautifully designed, space-saving cabinet—swivel brake caster and heavy rubber tires.

HARTMAN CORP. OF AMERICA
ST. LOUIS 10, MO.

MORE THAN STRAINS

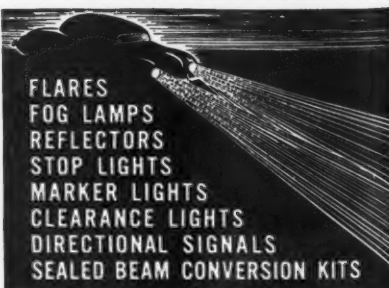


*Actually
Cleanses
Oil!*
DELUXE
*Oil
Filters*

DE LUXE PRODUCTS CORP., LA PORTE, IND.

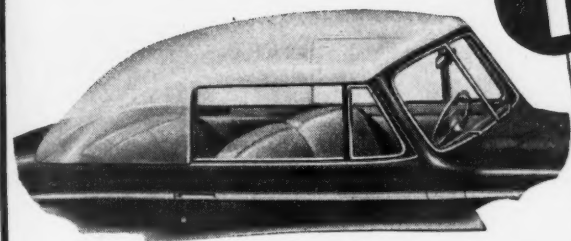


Bonney Forge & Tool Works
Allentown, Pa.



ARROW SAFETY DEVICE CO.
MOUNT HOLLY, N. J.

Enjoy Tomorrow's Car **TODAY!**



"Plexi-Top"

Registered Trademark

A full-vision, plastic top for convertibles is now available clear and in tints. All the thrills of riding in an open car, but with protection from weather, plus advance styling are but a few of the advantages of this unique accessory. Does not necessitate removal of your present top—just lower it and install "Plexi-Top"—takes but a few seconds—no tools required. *Prompt delivery.*

Send for literature.



"Plexi-Partition"

Registered Trademark

An optically-clear, plastic partition for station wagons. "Plexi-Partition" is designed to retain the heat in the driver's compartment—ideally suited for those cold winter months ahead. Whenever heat is desired for entire interior, "Plexi-Partition" can be quickly swung back and fastened to top of car. All "Plexi-Partitions" are form-fitted to meet individual vehicle requirements. *Immediate delivery.*

We solicit special plastics fabrication problems.

PLASTICS
DIVISION of

WRIGHT-AUSTIN CO.

DETROIT 26, MICHIGAN

334 WEST
WOODBIDGE

WARNING

Counterfeiters at Work!



Service men are being offered replacement parts which imitate Auto-Lite original factory parts in trade mark, appearance and packaging. These counterfeit parts are of imperfect measurement and inferior quality. The counterfeiting is, however, clever and difficult to detect. There is only one sure way to make certain of getting genuine Auto-Lite original factory parts.

**Buy only from Authorized
Auto-Lite Parts & Service Distributors**

THE ELECTRIC AUTO-LITE COMPANY
Parts and Service Division

Sarnia, Ontario

Toledo 1, Ohio

Here's a Bookful of Short Cuts to Low-Cost Cleaning



Don't pass this up! Yours for the asking, this newly-revised Oakite Automotive Servicing Manual contains step-by-step details bound to help you save time and money on your overhaul and maintenance-cleaning operations.

Its fact-filled 36-pages describe job-tested ways to clean carburetors and fuel pumps; wash truck and bus bodies; clean parts before overhaul; paintstrip surfaces. Based on more than 37 years' cleaning experience, this Oakite booklet gives you the dependable lowdown on every phase of low-cost automotive cleaning.

SEND FOR YOUR FREE COPY TODAY!

OAKITE PRODUCTS, INC., 24C Thames St., NEW YORK 6, N. Y.
Technical Service Representatives Conveniently Located in All Principal
Cities of the United States and Canada

OAKITE *Specialized* **CLEANING**
MATERIALS · METHODS · SERVICE · FOR EVERY CLEANING REQUIREMENT



WITH

MASTER RECAMS

MASTER RECAMS are individually designed for all late model cars; easily installed without removing pistons. The profitable way to Stop Piston Slap, Oil Pumping and Motor Noise.



50¢ EACH

REGULAR DISCOUNTS TO JOBBERS AND DEALERS

WHERRY ENGINEERING COMPANY

3227-29 Morganford Rd., ST. LOUIS 16, MO.

When the Motor is Down
Build it Up with...



ALLIED MOTOR PARTS CO.
DETROIT 1, MICHIGAN

CLUTCH FACINGS • RIVETS

HE'S MY LEAD ANIMAL, CHARLOTTE, WHAT'LL I DO IF WE CAN'T CATCH THE RUNAWAY RASCAL, HUH?

DON'T GIVE UP SANTA

JUST WAIT FOR THE RIGHT "BREAK" AND LEAVE THE REST

TO GOOD OLD SOUTHERN BRAKE LINING

"TOUGH BREAK"

MERRY XMAS ASIS SHOW 1946

SOUTHERN

FRICION MATERIALS CO.- CHARLOTTE, N.C.

BRAKE SHIM STOCK • RELINING EQUIPMENT

HYDRAULIC BRAKE PARTS • BRAKE FLUID

Since 1897

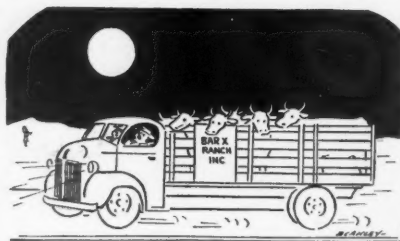
UNITED STATES ELECTRICAL TOOLS

have never swerved from their original standards of QUALITY AND SERVICE

THE UNITED STATES ELECTRICAL TOOL CO.
CINCINNATI, OHIO

New Grease Container Simplifies Filling

The Fil-Rite Co., of Minneapolis has announced that manufacturing rights are available for the new Fil-Rite Grease Container. The standard 25-pound size container contains a "follower" plate which goes down into the bucket as the grease level drops. The grease gun is inserted in the grease through a Neoprene gasket. By pulling up the handle of the hand grease gun, a vacuum is created under the follower plate which puts an atmospheric pressure of over 1,000 pounds on the plate and pushes it down into the container, according to the dealer, forcing the grease up into the gun barrel.



"Git Along Little Dogies, Git Along..."

THE COMPLETE LINE that Completely Satisfies

Since 1906

The Fitzgerald Mfg. Co.
Torrington, Connecticut

Fitzgerald
GASKETS



Distributed Exclusively Through Automotive Wholesalers

Wire Joe

AUTOMOTIVE CABLE
manufactured by
THE CRESCENT COMPANY, Inc.
Pawtucket, Rhode Island

Ask about the

FOX

RAPID BATTERY CHARGER

FOX PRODUCTS COMPANY
PHILADELPHIA 41, PA.

NEW! BLOWOUT-PROOF RUBBER RIVETS SAVE TIRES

SPEAKER Rubber Rivets seal nail holes and small breaks. A quick pull on the wire needle makes a repair that outlasts the tire. Prevent fabric rot and blowouts with Rubber Rivets. Get some from your jobber today.

The finished job... safe and strong... water-tight.

J. W. SPEAKER CORP.
Milwaukee 12, Wis.

MAREMONT HAS WHAT IT TAKES

MUFFLERS—TAILPIPES
ALLOY STEEL SPRINGS

MAREMONT AUTOMOTIVE PRODUCTS, INC.
So. Ashland at 16th St.
Chicago 8, Illinois



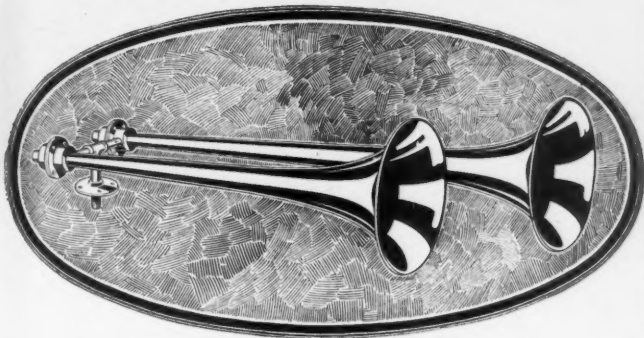
GLOBE
Full-Spark Plugs

GLOBE SPINNING POWER Batteries

GLOBE-UNION INC.
MILWAUKEE 1, WIS.



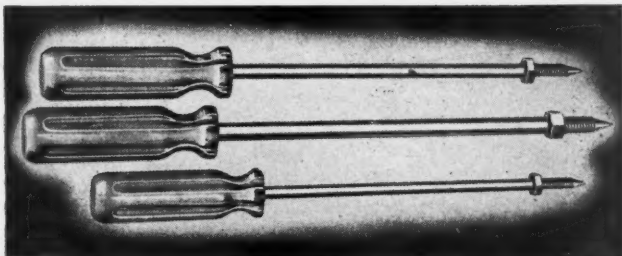
BUELL AIR HORNS



A LIFE SAVING . . .
TIME SAVING . . .
SAFETY SIGNAL

THAT IS A MONEY SAVER TOO!

BUELL MANUFACTURING CO.
2991 COTTAGE GROVE AVE., CHICAGO 16, ILL.



Patent Applied For

New LYN-A-LINE Alignment Tool

- Speeds Up Jobs!
- Cuts Time and Expense!

Here it is! A brand New Tool that mechanics will go for in a big way. No more aggravation or waste of time . . . no more cussin', no more whine! This NEW LYN-A-LINE Alignment Tool lines up holes in a jiffy in oil pans, fenders, radiator shells, etc., and holds them in position on all jobs where two holes must be lined up. Makes the installation of such jobs an easy and simple matter for one man.

With Genuine Amber Butelyn Handle

Equipped with Amber Butelyn Handle . . . Shockproof, Breakproof and Hammerproof! Blade is forged of high carbon tool steel and carries our unqualified Guarantee of Satisfaction. Tool is available in three lengths and three diameters for all cars, trucks and buses.

Write for Catalog Sheet

Sold thru Jobbers only



LYNN PRODUCTS COMPANY, Inc.
319 East Ontario Street, CHICAGO 11, ILL.

DEPENDABLE



REPLACEMENT PARTS

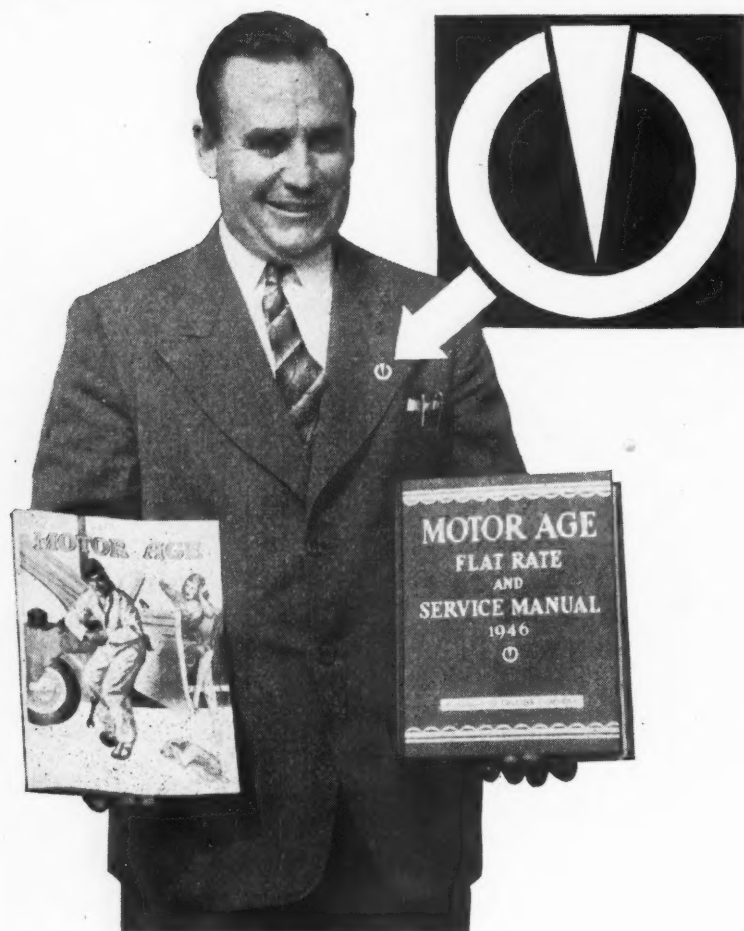
It will pay you to install dependable MASTER Replacement Parts on all of your repair and replacement work. MASTER parts are preferred by repairmen the world over!



A
DEPENDABLE
MANUFACTURING
SOURCE OF
SUPPLY

CHEFFORD MASTER MFG. CO., INC.
(DEPT. B.)
FAIRFIELD, ILLINOIS

Here's How to Tell at a Glance



*if a
salesman
represents*
MOTOR AGE

**LOOK FOR
THE MOTOR
AGE SYMBOL
*in his
buttonhole***

We don't mind it if you buy another publication service if it is the service of your choice, but too many times our subscribers have bought without making certain

they were purchasing Motor Age and Chilton Service. That's unfortunate and regrettable.

To make it easy for you to be sure next time, we have asked Motor Age Chilton Men to wear the Company's familiar trademark on their coat lapels.

You know the well-known wedge that splits a circle—that's the Motor Age-Chilton symbol.

Look for it whenever a publication or manual salesman walks into your place. If you see the symbol, he's your man.

You'll find his name in the list of our representatives listed below:

Territory

Ohio
Eastern Penna., Delaware, Maryland
Tennessee, Arkansas, Louisiana
West Virginia, Ohio
Western Pennsylvania
Washington, Oregon, Idaho
Missouri, Kansas
Michigan
Virginia, The Carolinas, Washington, D. C.
Central California, Nevada, Utah
Illinois
Iowa, South Dakota, Eastern Nebraska
Colorado, Wyoming, Montana, Western Nebraska

Salesman

A. C. Bendall
J. Briskman
W. R. Casey
G. M. Clark
Fred Cloud
E. E. Davis
H. C. Eckert
Earl Flaherty
John Gifford
Noble Hickey
Ed Hill
R. M. Hoover
Wm. M. Jewett

Territory

Florida, Georgia, Alabama, Mississippi
Southern California, Arizona
Metropolitan New York City
Northern Texas, Oklahoma
Western New England
Chicago, Western Indiana, Western Kentucky
New Jersey, Eastern New York State
Eastern New England
Wisconsin
Southern Texas, New Mexico
Western New York State
Northern California
Chicago, Eastern Indiana, Eastern Kentucky
Minnesota, North Dakota

Salesman

George H. Kennedy
Ed Koschnick
Harry Landy
Paul W. Lively
P. H. Lyman
Paul Martin
F. A. Moran
C. J. Mullin
H. H. Nixon
F. Sausser
D. N. Schwarz
H. G. Spiller
H. Stenzel
W. G. Stoll

STOP LEAKS

USE **MOGULOID** FIRST
TO MAKE ANTI-FREEZE LAST.



**BEST FOR
CRACKED BLOCKS
COOLING SYSTEM LEAKS**

Moguloid is scientifically formulated with a blend of pure copper and chrome flour. Penetrates deep into cracks and fissures building up an actual metallic bond that is guaranteed permanent. Nothing else like it.

Moguloid

DOES THE JOB OR YOUR MONEY BACK

Get Your Moguloid Now!

MOGULOID COMPANY OF AMERICA

Division of Metallizing Co. of America

1330 W. Congress St., Chicago 7

Immediate Shipment!



**"PERFECT"
PARTS
WATER
PUMP
HOSE**

**ASSORTMENT
NO. PK-2**

Contains 12 pieces of 1-inch By-Pass Water Pump Hose, cut to fit all

**Chrysler, De Soto, Dodge and
Plymouth Cars, 1933-46**

Packed in attractive carton, as illustrated. List Price \$1.25.

In bulk, 100 to Carton
List Price 10c. each.

PERFECT PARTS, INC.

55 Amsterdam Avenue, New York 23, N. Y.

FASTER, BETTER DRYING

with

NALCO
DRITHERM
INFRA-RED

LAMPS
FOR TOUCH UP
or
**ENTIRE BODY
JOBS**



Drying time is reduced from hours to minutes with Nalco Infra-red Lamps. After only three or four minutes of exposure to this highly-penetrating heat lacquer primer surface undercoats are ready for sanding. On synthetic enamels after approximately seven or eight minutes of drying, it is possible to rub, polish or sand within fifteen or twenty minutes.



Nalco Infra-red Lamps are available in the Inside-Silvered self-reflecting or in the clear-glass type. May be used in strips, banks, or portable units.

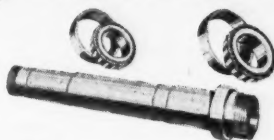
Send for free copy of "Factory Methods in Your Shop"



NORTH AMERICAN
Electric Lamp Co.

1071 Tyler St.
St. Louis 6, Mo.

3 announcements in 1



**The New TRB-S56
SHELDON**
Precision Lathe

New ... an 11" lathe with "Zero Precision" Tapered Roller Bearings.

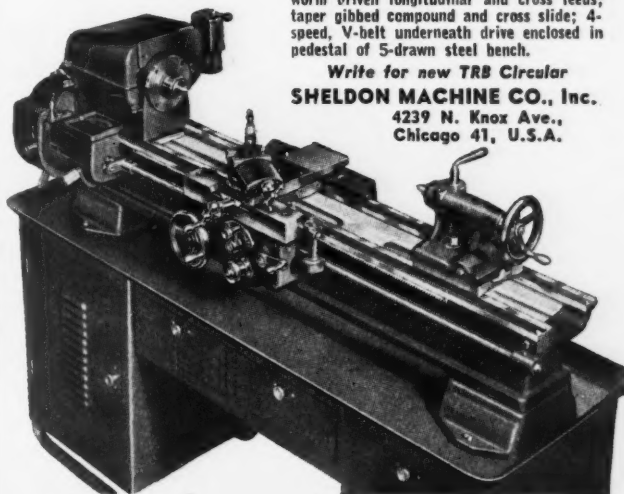
New ... a moderate priced lathe with precision unsurpassed at any price.

New ... the famous "S-56" with 11 1/4" swing and 1" collet capacity, with zero precision spindle bearings.

Other features include: 56" bed; full quick change gears; full double walled apron with worm driven longitudinal and cross feeds; taper gibbed compound and cross slide; 4-speed, V-belt underneath drive enclosed in pedestal of 5-drawn steel bench.

Write for new TRB Circular

SHELDON MACHINE CO., Inc.
4239 N. Knox Ave.,
Chicago 41, U.S.A.





● Participants in the Payroll Savings Plan benefit directly in terms of cash—because U. S. Savings Bonds at maturity pay \$4 for every \$3 invested.

Your company, your community, and your country benefit indirectly in terms of security—because: (1) Employees with a solid stake in the future are likely to be stable, productive workers. (2) The Bond-buying habit of local citizen-employees means a reserve of future purchasing power—a safeguard for the stability of your community. (3) Every Bond bought temporarily absorbs surplus funds and helps check inflationary tendencies.

You're doing everybody a favor—including yourself—by supporting the Payroll Savings Plan.

ARE YOU USING THESE BOOKLETS?

If not, or if you wish additional copies, just ask your State Director of the Treasury Department Savings Bonds Division.

The Peacetime Payroll Savings Plan—A booklet, published for key executives by the Treasury Department, containing helpful suggestions on the conduct of your payroll savings plan for U. S. Savings Bonds.

This Time It's For You—A booklet for employees ... explaining graphically how the payroll savings plan works ... goals to save for, and how to reach them with Savings Bonds.



The Treasury Department acknowledges with appreciation the publication of this message

This is an official U. S. Treasury advertisement prepared under the auspices of the Treasury Department and The Advertising Council

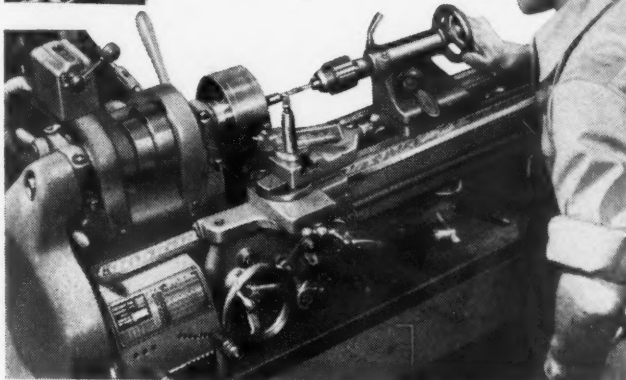


THE MOST USEFUL TOOL in SERVICE-REPAIR WORK

A South Bend Precision Lathe will help you to turn out more and better service jobs faster, easier, and more profitably. New parts can be made, or old parts reconditioned to give additional service, quickly, economically, and to original factory specifications on this versatile machine tool. This means greater profits for you. Equally as important is the fact that you can do right in your own shop these machining jobs which are needed to speed and improve service, increase shop capacity, and build greater customer satisfaction.



WRITE FOR FREE CATALOG
Catalog 100-F illustrates and describes 9", 10", 13", 14-1/2", and 16" South Bend Lathes. Mention size lathe in which interested.



LATHE BUILDERS SINCE 1906

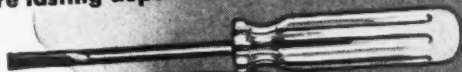
SOUTH BEND LATHE WORKS

450 E. MADISON ST., SOUTH BEND 22, INDIANA



Quality you can
see in
VACO
screw drivers

These transparent
Amberyl plastic handles
tell their story at a glance...
break-proof strength, shock-proof
safety...shafts and bits of the finest steel alloy, treated
to insure lasting dependability on every type of job.



There are 173 types of
Vaco screw drivers. Type shown

above is de-
signed to take care of
many radio requirements.

VACO

PRODUCTS CO. CHICAGO 11, ILL.

CANADIAN WAREHOUSE
520 KING STREET WEST - TORONTO 2, ONT.

Write for catalog.



LEAF SPRINGS

for

**Passenger Cars,
Trucks, Trailers
and Busses**

*Write for information, literature
and nearest distributor*

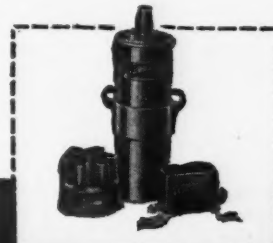
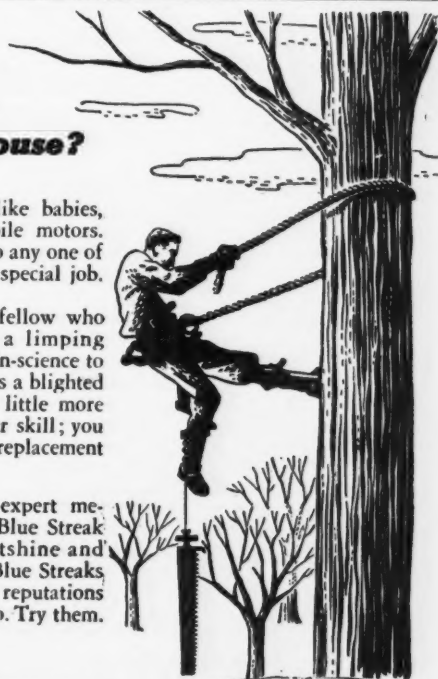
TRAINOR NATIONAL SPRING CO., INC.
New Castle, Indiana

**Is there
a doctor
in the house?**

Trees get sick...like babies,
dogs and automobile motors.
And being doctor to any one of
the three is a very special job.

As we see it, the fellow who
puts a breeze in a limping
motor is a partner-in-science to
the fellow who saves a blighted
elm. But it takes a little more
than your own sheer skill; you
have to count on replacement
parts, too.

Time after time, expert me-
chanics have seen Blue Streak
Ignition Parts outshine and
outlast all others. Blue Streaks
are watchful over reputations
...and pennies, too. Try them.



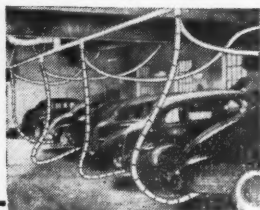
STANDARD MOTOR PRODUCTS, INC.

37-18 Northern Blvd., Long Island City 1, N. Y.

NEW GARAGE FUMES VENTILATING SYSTEM

Get rid of poison exhaust gas this simple inexpensive way. The final, successful solution to your garage ventilation problem. All available in a packaged kit ready to install.

COMPLETE PACKAGED KIT
\$187.50 F.O.B.
DECATUR
PATENT PENDING



- Removes gas fumes at source (exhaust pipe).
- Simple installation—no change or alteration of existing facilities.
- Not in your way—instantly in use or out of the way when you don't need it.
- Saves man-hours and helps keep employees. Mechanics have less sinus, headaches, time loss.

Write for circular

National System of Garage Ventilation
Dept. H. 522 E. William Street
Decatur Illinois

New Super-Easy CAMBER-CASTER GAGE

The Only Gage With A Built-In Floor-Slope Compensator

Handiest camber-caster gage ever invented. Accurate. Simple. Low priced. The only gage that has a built-in floor slope compensator (Patented), that makes every floor a level rack.

Micro-Linor Service Corporation
1623 W. Fort Detroit 16, Mich., U.S.A.

Write for
Literature



Stop
Accidents
WITH



OIL-DRI

ALL-PURPOSE
REG. U.S. PAT. OFF.

Keep floors free of oil and grease accumulations and oil-and-water "slicks" that cause accidents resulting from falls.

Oil-Dri Company

OF AMERICA

520 N. MICHIGAN AVE., CHICAGO 11, ILLINOIS

The STANDARD
OF
BATTERY TESTING
INSTRUMENTS

DEPENDABLY
ACCURATE



Edelmann
THERMO "Break-Not"
HYDROMETERS

E. EDELMANN & CO. CHICAGO, ILLINOIS

IMPROVED MODEL

RIMAC

SPRING TESTER

For VALVE and CLUTCH SPRINGS

MANY added improvements. Larger dial with easier-to-read numerals. Mechanism more sensitive. Smoother in operation. More rugged in construction.

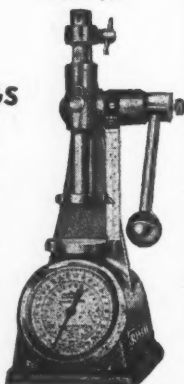
Enables you to test all valve springs for correct and uniform tension, insuring top engine performance and elimination of fuel waste. Complete Valve Spring Tension Chart FREE with every Tester.

Used in production and recommended for service work by leading manufacturers of automobile, airplane, truck, and tractor motors.

RINCK-McILWAINE, INC.

16 Hudson St., New York 13, N. Y.

Range up to 250 lbs.
PRICE \$45



KEEP CUSTOMERS SMILING
WITH BETTER MOTOR TUNE-UPS!

Always Use

Z-4 RING & VALVE FREE

Quickly frees sticky valves and piston rings... magically removes injurious gums from bearing surfaces... Z-4 adds new "zip" to motors and makes them stay young. Ask your jobber about Z-4 today!

U. S. Chemical & Supply Co.

1424 McGee St. Kansas City 6, Mo.



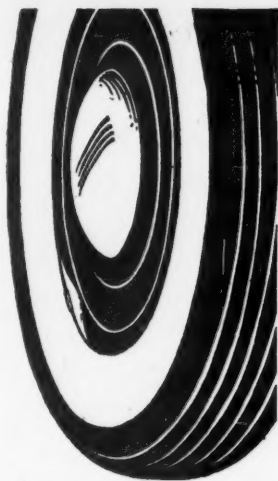
MOTOR AGE

—is a publication keyed directly to the needs of the maintenance field. Built on the requirements of repair shops. Edited by Bill Toboldt. Read it every month.



A Chilton Publication

CHESTNUT AND 56TH STS.
PHILADELPHIA 39, PA.



SNUGL
FAD-A-WAY
AUTOMOTIVE
WHEEL BALANCE WEIGHTS
TRUCKS • BUSES • PASS. CARS



PAT. NO. D-119-321
D-5188
MID-WESTERN AUTO PARTS
(FACTORY)
824 E. ELM ST., KOKOMO, INDIANA
MID-WESTERN AUTO PARTS
736 S. GREENLEAF ST.
WHITTIER, CALIFORNIA

Grote Reflectors Flares Lamps

ORDER FROM
YOUR JOBBER

Automotive Sales
Office —
Moorestown, N. J.

GROTE MANU-
FACTURING CO., Inc.

Bellvue,
Kentucky

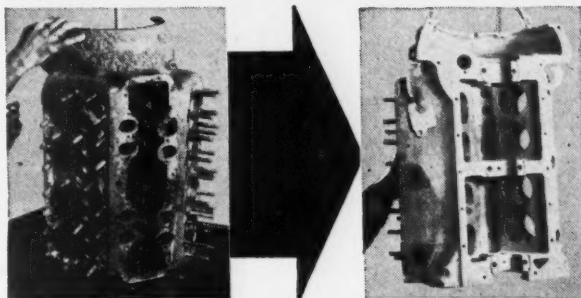
Hygrade Line
AUTOMOTIVE
PRODUCTS

**REPLACEMENT PARTS
by HYGRADE**

CARBURETOR AND FUEL PUMP
PARTS IN CONTAIN-ALL KITS
SHOCK ABSORBER PARTS
SPEEDOMETER CABLE, CASING,
TIPS AND SHAFTING
FUEL LINES AND FITTINGS

HYGRADE PRODUCTS CO., INC. · LONG ISLAND CITY 1, N. Y.

It's new! Turco FERREX Low-cost Tank Cleaner



Strips both Carbon and Paint

Here, at last, is an effective tank cleaner that, quickly, easily, economically removes stubborn carbon, paint, grime, grease, gums, resin and heavy dirt. Due to its double cleansing action, resulting from a combination of *two* cleaning agents—an alkaline solid and a direct action liquid solvent—it combines the benefits of *both* a hot and a cold tank cleaner for the cost of one. Ferrex requires no special equipment, contains no inert ingredients and may be used over and over again with little depletion of strength. See your Turco Field Serviceman or write Dept. MA-12.



TURCO

INDUSTRIAL CLEANING COMPOUNDS

TURCO PRODUCTS, INC. Main Office & Factory: 6135 S. Central Ave., Los Angeles 9
Offices & Factories: 125 W. 48th St., Chicago 9 · 1606 Henderson St., Houston 1, Texas
New York Office: 21 West Street, New York 6 · Offices & Warehouses in All Principal Cities

ELIMINATE SANDING and ELBOW GREASE Remove RUST Chemically

with **METALPREP 79-V**



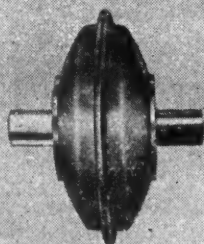
• In preparing metal for paint, don't do it the hard way. Use the proven cleaner, METALPREP 79, on your refinishing jobs. It's easy, more effective and thorough. Simply BRUSH ON, STEEL-WOOL, SCRUB and WIPE OFF. PREWAR FORMULA.

Ask your jobber or write for Bulletin 44-5.

JOBBER: Add profit with Metalprep.

NEILSON CHEMICAL CO.

6570 Benson St., Detroit 7, Michigan
Windsor, Ont. Los Angeles, Calif.



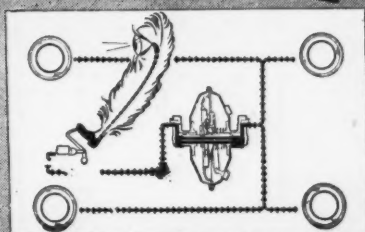
Write for the complete
Vacdraulic catalog of
engineering and in-
stallation details today.

VACDRAULIC

**POWER
BRAKING**

KELSEY-HAYES WHEEL CO.
Detroit 32, Mich.
Sold to Automotive Distributors by
EMPIRE ELECTRIC BRAKE CO.
Newark 7, N. J.

VACDRAULIC is a Trade Mark of
Empire Electric Brake Company



A C Spark Plug Div. General Motors Corp.109-129
 Air Reduction Sales Co. 82
 Airtex Automotive Division.. 6
 Allen Electric & Equip. Co.... 18
 Allied Motor Parts Co. 146
 Aluminum Co. of Amer. 71
 Aluminum Industries, Inc. 79
 Amalie Div. 122
 American Hammered Piston Ring Div. of Koppers Co. Back Cover
 Aro Equipment Corp., The.... 125
 Arrow Safety Device Co. 144
 Auto Specialties Mfg. Co.24-25
 Automotive Mfg. Co., Inc. 116
 Autopulse Corporation 95

Barrett Equipment Co. 113
 Beavertell Co. 144
 Black & Decker Mfg. Co. 91
 Blackhawk Mfg. Co. 85
 Bonney Forge & Tool Works.. 144
 Borg-Warner Corp. 1
 Bowes "Seal Fast" Corporation 20
 Buell Manufacturing Company 147
 Campbell Co., H. D. 140
 Capper's Farmer 87
 Carter Carburetor Corp. 131
 Casite Corporation, The. 63
 Central Equipment Co. 94
 Central Tool Co., The. 136
 Char-Lynn Co., The. 126
 Chefford Master Mfg. Co., Inc. 147
 Chevrolet Motor Div.26-27
 Chicago Show Printing Co. 97
 Chrysler Corp. (Parts Div.).. 29
 Circo Products Company 127
 Classified Advertisement 142
 Clayborne Mfg. Co. 143
 Cords Piston Ring Mfg. Co. 144
 Crescent Company, Inc., The.. 146

Delco Radio Div. 139
 DeLuxe Products Corp. 144
 De Vilbiss Company, The. 155
 Dodge Div. Chrysler Corp. 73
 Dole Valve Co., The. 141
 Durkee-Atwood Co. 112

Edelmann & Co., E. 152
 Egan Mfg. Co., H. B. 132
 Eis Automotive Corp., The. 140
 Elastic Stop Nut Corp. 28
 Electric Auto-Lite Co.13-65-145
 Emerol Mfg. Co., Inc. 84
 Empire Electric Brake Co. 153

Fitzgerald Mfg. Co., The. 146
 Ford Motor Co. 135
 Fox Products Company 146
 Fram Corporation 23
 Freedom-Valvoline Oil Co. 138
 Frenchtown Porcelain Co. 142

Gatke Corporation 110
 General Electric Co. 83
 General Motors Corp. 4
 General Tire & Rubber Co.10-11
 Globe-Union, Inc. 146
 Grote Mfg. Co., Inc. 153
 Guide Lamp Div. 133

Hall Mfg. Co., The. 101
 Hansen Mfg. Co., The. 137
 Harrison Radiator Div. 115
 Hartman Corp. of America... 144

INDEX TO ADVERTISERS

This Advertisers' Index is published as a convenience, and not as part of the advertising contract. Every care will be taken to index correctly. No allowance will be made for errors or failure to insert



Hastings Mfg. Co.2nd Cover
 Hollingshead Corp., R. M. 67
 Hulbert Manufacturing Co. 142
 Hygrade Products Co., Inc. 153
 Hyland Manufacturing Co. 142

Imperial Brass Mfg. Co. 142
 Independent Pneumatic Tool Co.102-103
 Inland Mfg. Div. 123
 International Chain & Mfg. Co. 141

Johnson Bronze Co. 114

Ken Tool Mfg. Co. 142
 King Quality76-77
 Klemm Automotive Products Co. 100
 Koppers Co., American Hammered Piston Ring Div. Back Cover

Lanagan & Hoke. 70
 Lemco Products, Inc. 72
 Libbey-Owens-Ford Glass Co. 111
 Lion Auto Parts & Mfg. Co. 120
 Littelfuse, Inc. 142
 Logan Engineering Co. 74
 Lynn Products Co., Inc. 147

McAleer Manufacturing Co. 144
 McKay Company, The. 90
 McQuay-Norris Mfg. Co. 8-9
 Management & Research, Inc. 19
 Maremont Automotive Prod. Inc. 146
 Martin-Senour Company 121
 Micro-Linor Service Corp. 152
 Mid-Western Auto Parts Co. 153
 Moguloid Co. of Amer. 149
 Moog Piston Ring Co. Div. 5
 Moog Industries, Inc. 156
 Moraine Products Div. 156
 Motor & Equipment Wholesalers Assn. 68
 Motor Age 148
 Mystik Adhesive Products.... 97

National Automotive Parts Association 144
 National System of Garage Ventilation 152
 Neilson Chemical Co. 153
 New Britain Machine Co. 17
 Niehoff & Company, C. E. 99
 North American Electric Lamp Co. 149

Oakite Products, Inc. 145
 Oil-Dri Co. of America. 152

Paneff Mfg. Co. 142
 Pedrick Piston Rings. 15
 Perfect Parts, Inc. 149
 Permatex Co., Inc. 3
 Practical Products Co. 88
 Pratt Industries, Inc. 142
 Puritan Company, Inc. 96
 Purolator Products, Inc. 142
 Pyrene Mfg. Co. 80

Ramsey Corporation..Third Cover
 Resistoflex Corp. 21
 Rinck-McIlwaine, Inc. 152
 Ruger Equipment Co., Inc. 104

Safety & Maintenance Co. 130
 Saturday Evening Post.92-93
 Schildmeier Co., H. C. 30
 Schrader's Son Div. A. 118
 Sealed Power Corp. 32
 Service Spring Co. 144
 Service Supply Company. 106
 Sheldon Machine Co., Inc. 149
 Shurhit Products, Inc. 142
 Siebring Manufacturing Co. 128
 Si-En-Tif-Ik Products Co., Inc. 78
 Sight Feed Generator Co., The 124
 Snap-On Tools Corp. 113
 Sonneborn Sons, Inc., L. 122
 South Bend Lathe Works. 151
 Southern Friction Materials Co. 146
 Speaker Corporation, J. W. 146
 Standard Motor Products, Inc. 151
 Standard Pressed Steel Co. 7
 Studebaker Corp. 61

Texas Company, The. 2
 Thermoid Co. 89
 Timken Roller Bearing Co., The 12
 Trainor National Spring Co. 151
 Treasury Dept. 150
 Trico Products Corp. 14
 Turco Products, Inc. 153

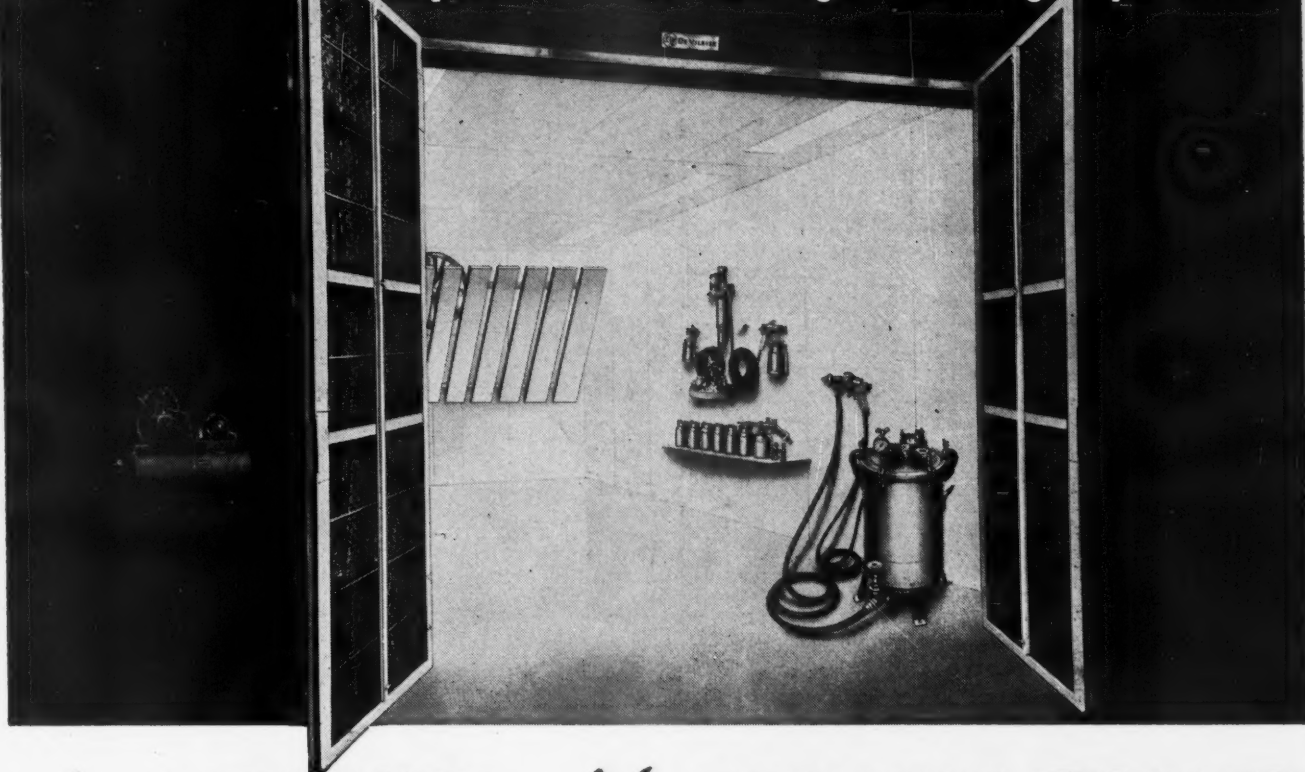
U. S. Chemical & Supply Co. 152
 United Motors Service Div. G. M. Corp.105-139
 United Parts Mfg. Co. 86
 United States Electrical Tool Co., The 146

Vaco Products Co. 151
 Van Bergen & Greener, Inc. 142

Wagner Electric Corp. 81
 War Assets Administration... 117
 Warner-Patterson Co. 134
 Waterbury Tool Division. 22
 Waverly Petroleum Products Co. 130
 Wayne Pump Co., The. 108
 Weatherhead Co., The. 107
 Wedler-Shuford Co. 144
 Weidenhoff, Inc., Joseph. 31
 Wells Mfg. Corporation. 142
 Wherry Engineering Co. 146
 Wilkening Mfg. Co. 15
 Willard Storage Battery Co. 75
 Wiry Joe 146
 Wolf's Head Oil Refining Co. 16
 Wood Co., Frank N. 69
 World Bestos Corp. 98
 Wright-Austin Co. 145
 Wrigley Jr., Co., Wm. 143

Investigate this first—

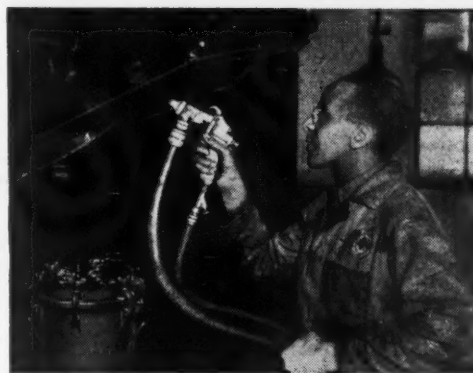
Complete "in-one Package" Painting Department



that's PACKED with EARNING POWER

Before you buy any new equipment, investigate the first and finest complete painting department ever made. It's DeVilbiss equipped throughout to make "Factory Quality" finishing easier and faster. It has higher capacity—handles all types of paint jobs quickly—economically—profitably. And there's underbody coating equipment included to help you develop new business.

This new DeVilbiss "One-Package" Paint Shop is recommended by leading automobile manufacturers. With it you can really capitalize on today's tremendous refinishing market. Ask your DeVilbiss distributor for all the details.



THE DEVILBISS COMPANY • Toledo, 1, Ohio • Canadian Plant: Windsor, Ontario

DEVILBISS

means Quality in all four . .



SPRAY EQUIPMENT
EXHAUST SYSTEMS
AIR COMPRESSORS
HOSE & CONNECTIONS

PROVED

*in the airways
to serve on the
highways*

New High-Efficiency Filter Unit. The "business" part of the filter is DUREX—an important development in powder metallurgy by Moraine Products. Small metal spheres are bonded together to form a stronger, lighter, more efficient filter unit of controlled porosity. It won't chip, won't flake, won't break or bend, changing controlled filtering properties.

Low in Cost, Easy to Install. The Durex filter is priced to sell. Fast, easy installation makes it a "quick-sale, on-the-spot" item.

Fits All Makes of Cars, Trucks, Tractors. Every owner of a gasoline engine—automotive, marine, aircraft or industrial—is a potential customer for the new Durex gasoline filter.



Proved in Aircraft Use. Durex filter units safeguard military and commercial aircraft against impurities and particles in the gasoline. The Durex filter has been "proved in the airways."

THE *New* **DUREX** **GASOLINE FILTER**

Here's the new, high-efficiency filter that scientifically removes dirt, water, lint, scale and all foreign particles from gasoline. It's the quick, sure answer to better carburetion, more dependable motor performance. Millions of cars and other vehicles need Durex gasoline filters *right now!*

Take advantage of this huge market. Sell Durex gasoline filters to your customers, and give them the benefits of the Durex metallic filter element for finer filtration.

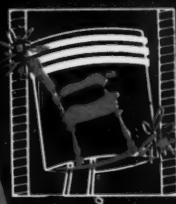
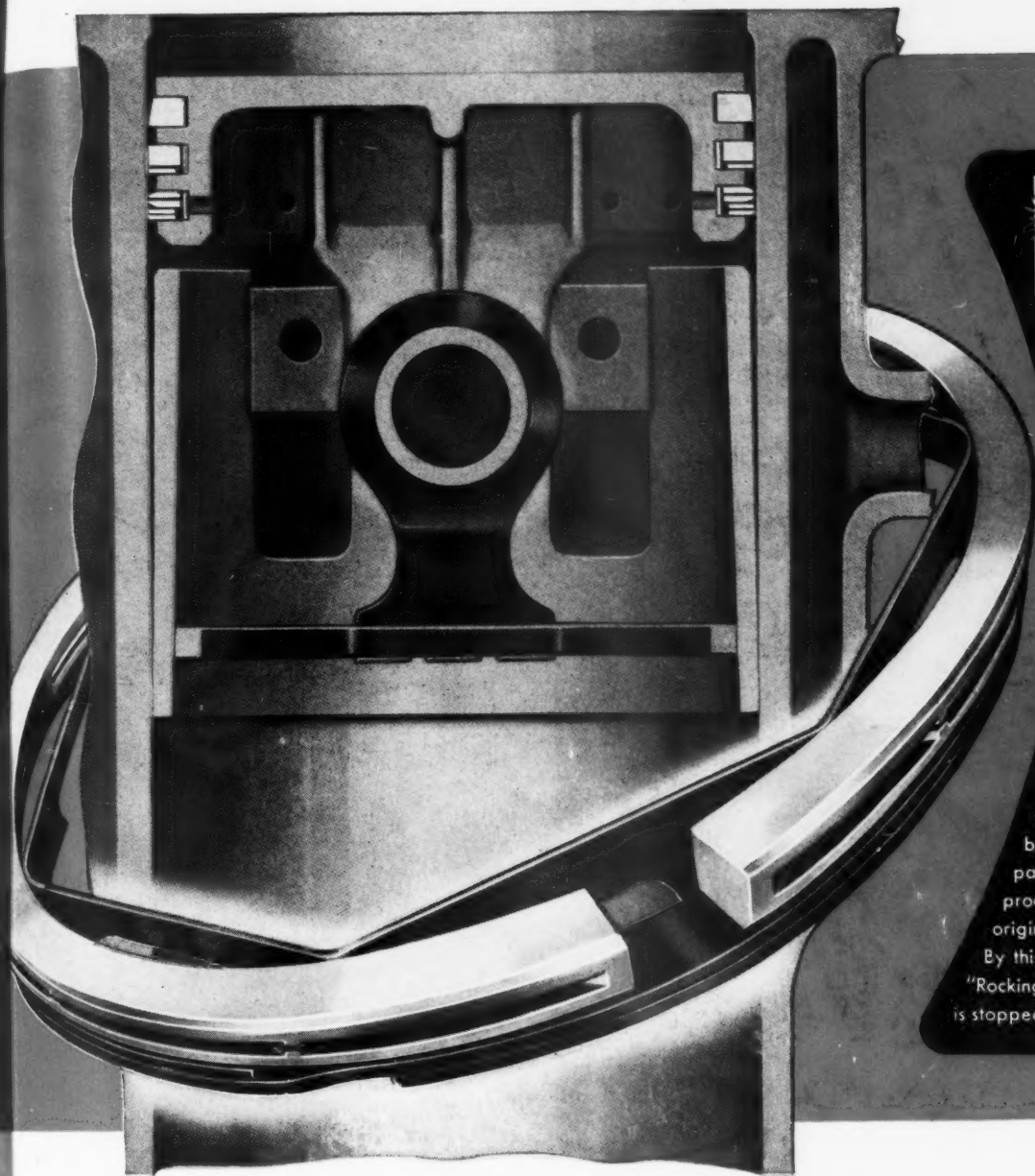


Durex gasoline filters are distributed by United Motors Service. Order from your distributor.

MORAINES PRODUCTS

DIVISION OF GENERAL MOTORS CORPORATION, DAYTON, OHIO

No other Ring even LOOKS like it....Why?



THE RAMCO METHOD OF ENGINE RE-POWERING

This piston cross-section illustrates the basic principle of piston control and engine re-powering pioneered and developed by RAMCO. The Ramco 10-Up Rings stabilize the piston head, and the Ramco Skirt Stabilizer stabilizes the skirt . . . or, the skirt is stabilized by **RAMCO-NIZING**, the patented peening process which restores original piston shape. By this method, "Rocking Chair Action" is stopped — **LONGER**.

because it's built to Stabilize Pistons **LONGER**

Ramco 10-Up looks different because it **IS** different—because it is designed to do, and does do, a different, better job. Look: This ring not only compensates for wear in worn cylinders, but automatically adjusts to the different and gentler action required in re-bored cylinders. That makes this the

ALL-PURPOSE ring, best for re-ring and re-bore jobs. That also makes possible Ramco's business-building 10,000-mile ring and labor guarantee.

Ramsey Corporation. 3718 Forest Park Blvd., St. Louis, Mo. Factories: St. Louis; Fruitport, Mich.; Toronto, Canada.

RAMCO *10 Up* **RE-POWER** *Ring*

BEST FOR EVERY JOB—RE-BORE OR RE-RING—PROVEN BY 10,000 MILE RING AND LABOR WARRANTY

Copyright 1946 by Ramsey Corp.
Trademarks Reg. U.S. Pat. Off.



What's The Limit?

China's Yangtze Gorge dam will be the world's greatest! It will generate 14 million horsepower—about five times the potential of Grand Coulee. Is this merely a step to still greater dams? What's the limit?

**IS KOPPERS AMERICAN HAMMERED POROUS CHROME
THE ENGINE-LIFE PISTON RING?**

We can't give you the final answer to that question yet. However, we can tell you that more than 7,000,000 miles of road tests in all types of service—from the stop-and-go of door to door delivery to the steady grind of heavy cross-country hauling—have proved that

Porous Chrome [VAN DER HORST PROCESS] multiplies ring life by four—*even five!* We can tell you that their fine honing action causes the entire set to seat within the first hour of operation, thus eliminating the costly wear of the break-in period. We can tell you that Koppers American Hammered Porous Chrome rings *cut cylinder wear in half!*

These amazing piston rings, which have set new standards of performance in the aviation, truck, and bus fields, will shortly be available for many makes of passenger cars. Koppers Company, Inc., Piston Ring Division, Box 626, Baltimore 3, Maryland.



**American Hammered
Porous Chrome
Piston Rings**